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Full Name of Author — Nom complet de l'auteur
DOUGHTY . SARAH JEAN

Date of Birth — Date de naissance
31 · OCTOBER 1934

Country of Birth — Lieu de naissance
ENGLAND

Permanent Address — Résidence fixe
11304 - 18 AVENUE
EDMONTON
ALBERTA T6J 4T9

Title of Thesis — Titre de la thèse
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Name of Supervisor — Nom du directeur de thèse
DR. JANET KERR.

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THE EFFECT OF THE NURSE-PATIENT INTERACTION ON THE PATIENT'S PERCEPTION OF PAIN

by

© SARAH DOUGHTY

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH
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(Signed) Sarah J. Doughty

PERMANENT ADDRESS:

11304 - 18 Avenue
Edmonton, Alberta
T6J 4T9

DATED April 27 1981

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled THE EFFECT OF THE NURSE-PATIENT INTERACTION ON THE PATIENT'S PERCEPTION OF PAIN submitted by SARAH DOUGHTY in partial fulfillment of the requirements for the degree of Master of Nursing.

Janet C. Kerr
Supervisor

J O'M Acton

Date April 9, 1981

To my mother who has always believed in me, and to Allen without whose support none of this would have been possible.

ABSTRACT

The main purposes of this study were: (1) to describe the nature of pain from a nursing perspective; (2) to describe the interaction that occurs between the patient and nurse; and (3) to examine the association between the nurse-patient interaction and the patient's perception of pain. The need for this study was identified as increasing knowledge in an area of nursing practice in which the nurse is in the position of making an important contribution to the patient in pain.

The units of analyses were patients and their attending nurses. The total number of patients was 30, 15 of whom had had an elective abdominal hysterectomy, and 15 a cholecystectomy. The 30 nurses caring for these patients on the third post-operative day comprised the nurse population.

In order to rate the patients' pain, nurses and patients completed two questionnaires, the Hayward Pain Thermometer (1975) and the Johnson Distress Scale (1976). A nurse-observer used the Chambers-Price Pain Index (1967) to rate the patients' pain.

The nurse-patient interaction was assessed by both the nurse and the patient, using the Barrett-Lennard Relationship Inventory (1969) which was based on Carl Rogers' (1961) theory of a therapeutic relationship. The inventory consisted of 64 items of which 16 items were directed to measuring each of four components of therapeutic relationship, Level of Regard, Congruence, Unconditionality of Regard and Empathy.

Data analysis was performed on the summated scores of each of the respondents' assessments. Statistical procedures used to analyze the data included correlations, analysis of variance, Pearson product-moment correlations, canonical correlation, factor analysis and multiple regression.

Results from the data analysis showed that in this study nurses' ratings of the amount of sensory pain the patients were experiencing did not correlate with the patients' ratings, the latter of which tended to be higher. However, ratings of patients' distress made by the nurses and patients correlated significantly. There was a trend that showed nurses with a post-basic baccalaureate degree, and nurses with 10 years experience or more, assessed patients as experiencing more distress than the other groups in the categories. It was found that in this group of patients, women in the age group of 30-39 years experienced more distress from the surgical procedure of cholecystectomy than the age groups 20-29, 40-49 and 50 years and more, and the group of women having a hysterectomy.

Of the four components of a relationship, level of regard, empathy, congruence and unconditionality of regard, only congruence was found to correlate significantly and negatively with patients' perception of pain. However, all four factors correlated significantly and negatively with patients' ratings of their distress.

The results of factor analysis of a reduced Relationship Inventory based on content validation, produced four factors, the first of which was labelled "likability", indicating that the patients found nurses who were friendly, warm and at ease in a relationship as most helpful. The remaining three factors were labelled "Level of Regard", "Response" and "Openness".

Reliability of the Hayward Pain Thermometer and Johnson

Distress Scale were low in this study. However, the Johnson Distress Scale had concurrent validity.

Results from a split-half reliability analysis of the four components of the Barrett-Lennard Relationship Inventory showed a high level of reliability, "level of regard" .83, "empathy" .70, "unconditional regard" .71 and "congruence" .70. However, in this study the results of factor analysis did not show empirical evidence of construct validity.

The findings indicate that further research is indicated in the area of nurse-patient interactions. Nursing behaviours that patients find helpful and acceptable in the acute surgical setting need to be identified. Further work is indicated in developing a multifaceted instrument to measure pain.

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Many people have contributed to the completion of this study, and I am indebted to them all. There are a few I would especially like to mention.

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I would like to thank the nursing administration and medical staff who granted permission for my study. My thanks also goes to Dr. C. B. Hazlett, Dr. K. Bay and Mr. C. Hathaway for the invaluable consultations they gave in their area of expertise.

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CHAPTER I

INTRODUCTION

Pain is a phenomenon known to us all, having no respect for creed, class or race; everyone at one time or another has suffered pain. The nurse's primary and unique responsibility to the patient in pain lies in the realm of assisting the patient to cope with pain regardless of its cause. The nurse may use a psychological approach in which the patient's pain is viewed not just as a sensation, but also as an affect. In attempts to understand the meaning of pain to the patient, important areas of assessment may lie in his personal and social characteristics. Using a psychological approach to pain does not mean that the nurse disregards the physiological aspects of pain, but rather that she focuses attention on pain in the context of the whole person. Through her support and understanding, she establishes a relationship that enables the patient to find within himself a capacity to cope with his pain. The purpose of this study is to examine the effect of the nurse-patient interaction on the patient's perception of pain.

Statement of the Problem

Pain accompanies most forms of illness and injury. It may be the primary cause for seeking medical assistance, or it may occur during the course of diagnosis or treatment of a condition. The role of the physician differs from that of the nurse in relation to the person in pain. One of the physician's main concerns is the diagnosis of the reason for the pain, and the prescription of analgesics to control it. The nurse, on the other hand, is in a position to make a different but important contribution to the patient with pain. Of all the health professionals, nurses have the most contact with the patient, as nursing provides a twenty-four hour service. In no area of nursing practice is there greater opportunity for assessment based on continuous observation, and for application of knowledge, than in discovering the patient's particular need for pain relief, establishing measures that produce individual relief from pain, and helping him solve the problems related to his pain. Nurses tend to overlook the importance of the relationship between themselves and their patients (McMahon & Miller, 1978), and its therapeutic value for patients in crises (Moos, 1977). Nurses need to possess knowledge of coping strategies, responses to illness such as mourning, anger, sadness, and be aware of intervening variables such as age, sex and culture. Such knowledge enables them to give both physical care and empathic understanding to patients who are learning to cope with pain. By recognizing the importance of the nursing role in facilitating the process of coping, the negative impact of the pain experience can potentially be reduced.

As a health care professional possessing nursing knowledge and clinical experience, and who is familiar with the patient's illness as well as his background, the nurse is in an advantageous position to assess pain. By drawing on her knowledge about pain, by studying the psychosocial circumstance of the individual experiencing pain and understanding the meaning of pain to the patient, the approach becomes multi-dimensional. Pain retards recovery, it can cause nausea and fatigue and prevent adequate fluid intake and early ambulation. The importance of the nurse's role in alleviating pain cannot be under-estimated. The quantity and quality of pain, its location, duration and degree of intensity assist the nurse in devising appropriate measures to alleviate the patient's distress. Many nursing methods have been described for the alleviation of pain including hypnosis, distraction, counter-irritation and narcotics (Beecher, 1975; Chaves & Barber, 1975; Hackett, 1971; McCaffery, 1979). Evidence that nursing interaction can relieve undesirable states in patients, such as distress, anxiety, discomfort, is beginning to accumulate (Bochnak, 1962; Dodson & Bennett, 1954; Dumas & Leonard, 1963; Elms & Leonard, 1966; Mahaffy, 1965; Moran, 1963; Tarasuk, 1965; Thornton & Leonard, 1964; Tryon, 1962).

A review of research shows that the study of the effect of nursing intervention on pain has been approached in two major ways. First, the nursing intervention consists of standardized scripts which the nurse recites to the patient (Meyers, 1964; Moss & Meyer, 1966). This method provides rigor and control, but probably interferes with the interpersonal component of the nursing interaction. The second method has been an experimental nursing approach based on general interpersonal theory in contrast to the traditional hospital nursing approach which tends to be task-focused rather than person-focused (Anderson & Leonard, 1964; Bochnak, 1962; Dumas & Leonard, 1963; Elms & Leonard, 1966; Mahaffy, 1965; Moran, 1963). A third method would be to use interaction analysis categories to define operational nursing approaches as predictors in clinical experiments on the effect of pain.

The main objective for this study was to explore the nature of pain from a nursing perspective, and the effect of the nurse-patient interaction on the patient's perception of pain.

Research Objectives

The specific research objectives for this study were: (1) to determine the level of nurse-patient interaction as perceived by the patient and the nurse; (2) to compare the patient's perception of the pain experience with that inferred by the nurse; and (3) to explore the association between the nurse-patient interaction and the patient's perception of pain.

The following expectations were held at the onset of the study concerning the association between nurse-patient interaction and patient's perception of pain.

(1) Patients who perceive the nurse's relationship as highly helpful will perceive their pain and distress as low.

(2) Nurses' and patients' perceptions of the amount of pain and distress will be congruent when the level of nurse-patient relationship is rated as high.

(3) The length of nursing service will correlate negatively with pain perception and level of the nurse-patient relationship.

(4) A higher level of nursing education will correlate positively with pain perception and the level of the nurse-patient relationship.

Scope of the Investigation

The scope of this study comprised the investigation of nurses' and patients' perceptions of the patients' pain, their perceptions of the nurse-patient relationship, and what effect, if any, this relationship had on the patients' perceptions of their pain. Following the work of

Hayward (1975) and Johnson and Rice (1974) this current investigation focussed on the measurement of two components of pain, sensory and reactive. The type of pain investigated was restricted to post-operative surgical pain experienced by female patients having had either a hysterectomy or cholecystectomy.

The components of the nurse-patient relationship were defined following the work of Barrett-Lennard (1969) which was based on Rogers' (1961) theory of the therapeutic relationship. These components included "Level of Regard", "Empathy", "Unconditional Regard", and "Congruence".

CHAPTER II

REVIEW OF THE LITERATURE

The purposes in presenting this literature review are to describe the nature of pain, to outline current theories of pain, describe the relationships between pain and individual characteristics and to explore the phenomenon of the relationship between nurse and patient in relation to alleviation of patients' pain.

The Nature of Pain

Pain has plagued mankind through the ages. It has been the subject of inquiry in such disciplines as theology, philosophy, anthropology, psychology, medical science and nursing. And yet authors have found it difficult to define. Lewis (1942, p. 4) wrote, "pain is known to us by experience and described by illustration." The problem of definition is inherent in any discussion of the behavioural sciences in which sensory and cognitive states are involved and pain is no exception as it involves both these states.

> Joy and pain like other simple ideas cannot be described by their names defined. Like other sensory ideas, we can get to know them only by experience. (Locke, 1969, p. 40)

Thus we have a phenomenon, pain, which involves both the physical (sensory) and cognitive (feeling) states. The question is raised as to the relationship between the physical process of pain sensations, and the conscious awareness of the experience. There is no denying the physical component of the pain experience, described as a reaction to noxious stimuli operating through the central nervous system (Murray, 1975). But how and where is this physical input translated into a conscious awareness of the pain experience? And which stored ideas, values, attitudes and experiences affect each individual's cognitive response to pain?

Beecher (1975) discussed the two components of pain, the original sensation and the reactive pain. The latter is the main source of suffering in any wound or injury. Moreover, the degree of reactive pain is dependent on a number of variables besides the magnitude of the original pain sensation (Melzack & Torgerson, 1971). One variable, for example, which is particularly significant in the perception of reactive pain is the level of anxiety that the injury occasions; the greater the anxiety about the pain, the greater is the resulting reactive pain.

However, in recent years, researchers have treated pain as a unitary phenomenon, not trying to separate the physical component from the cognitive state. Thus, pain has been measured along more empirical lines, in terms of actual behavioural responses of individuals in pain. The problem in using behavioural measures, where physiological and bodily responses to pain are recorded, is that some of the responses may not in fact be due to pain, but may accompany such states as fear and anxiety (Chaves & Barber, 1975). More recently, authors suggest that a subjective report of the pain-sufferer may be the most reliable method of establishing the existence of pain.

> Pain is whatever the experiencing person says it is, existing whenever he says it does. (Sternbach, 1968, p. 5)

It has long been recognized that the experience of pain is readily affected by motivational, perceptual and cognitive processes. Recent experimental work has begun to explore the nature of this relationship of "higher order" processes to pain, with an interest both in theoretical formulation and in practical application to the management of clinical pain. One area of research has been the role of instruction and suggestion in influencing pain perception (Blitz & Dinnerstein, 1971; Chaves & Barber, 1975; Hayward, 1975; Johnson, 1972; Mulcahy & Janz, 1973). What, for instance, are the processes by which instruction and suggestion produce some degree of a similar mechanism to hypnosis, disassociation, counter-irritation and distraction which are able to dominate the central nervous system and block the perception of pain? These matters reflect the power and importance of the reactive component of pain (Beecher, 1975).

Current Theories of Pain

Pain is a more or less localized sensation of discomfort or distress resulting from stimulation of specialized nerve endings. It has been defined as an abstract, but personal, private experience of hurt whose quality and intensity are known to be significantly influenced by psychological and socio-cultural variables (Kim, 1980; Melzack & Torgerson, 1971; Sternbach, 1968). Within the pain experience, the sensory component is probably common to everyone and is described as the type of pain (burning, sharp, dull or aching) and the intensity of pain (magnitude) (Jacox, 1977). The reactive component of pain is of psychological origin, affected by cognitive processes. These processes result in interpretation of the stimulus, and in Beecher's (1975) words, "suggest that the intensity of the sensation component of pain need not have a one-to-one relationship to the reactive component " (p. 79). Therefore, logically, the two components can be evaluated separately. The implication is that if a group of people received the same type and intensity of a sensory stimulus, the pain perception threshold would be about the same (Keele, 1948). However, the reactive component can be influenced by many factors, resulting in widely differing pain tolerance levels. This may explain why patients who appear to be afflicted with similar sensations react so differently to the stimuli (Beecher, 1975; Melzack & Casey, 1968; Melzack & Wall, 1965).

Pain theories are changing, based on an accumulation of physiological evidence and imaginative assumptions derived from psychological and clinical observations (Melzack & Wall, 1965). The main theories are generally grouped under four major headings: (1) affect; (2) specificity; (3) pattern; and (4) gate control. The first three theories are traditional; the last, however, attempts to integrate hypotheses from the three traditional theories on the basis of new clinical evidence and assumptions. More recent work is directed to isolating endogenous endorphins.

The Affect Theory

The affect theory views pain as an emotion rather than a sensation. The amount and quality of perceived pain are determined by many variables such as anxiety, fear, suggestion and the meaning of the pain to that person. Thus, pain as a sensation is just one part of the total pain experience, and it may not be the major feature. The other dimensions of pain such as motivation, emotion and cognition must be considered when discussing the comprehensive, holistic theories of pain.

This theory emphasizes the affective dimension of pain, but fails to account for a systematic explanation of the emotional aspects of pain (Hardy, Wolf & Goodell, 1952).

Specificity Theory

The specificity theory assumes that there are specific pain receptors existing in the skin as free nerve endings which activate either the A-delta or C fibres. From these receptors, impulses are transmitted to specific pain centres such as the thalamic nucleus via the lateral spinothalamic tracts. This theory is still partially accepted, as actual tissue damage does transmit impulses along these pathways (Guyton, 1976). However, it cannot be the entire answer as the specificity theory assumes that activity in these systems always produces pain (which it does not) and that feelings of pain inevitably follow such activity (which they do not). Pain paradoxes, such as phantom limb-pain and failure of surgical intervention to relieve pain, cannot be explained by the specificity theory (Melzack & Wall, 1965; Sternbach, 1968).

Pattern Theory

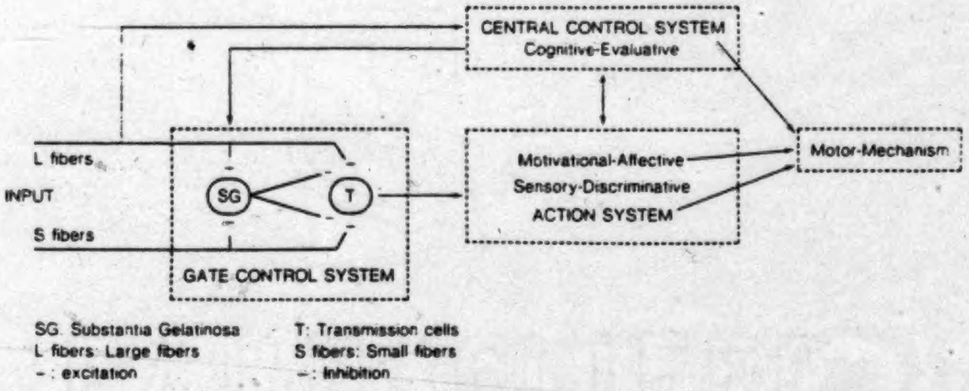
As a reaction against the psychological assumption in specificity theory, some physiologists proposed the pattern theory, in which intensity of stimuli with central summation are the critical components of the pain experience (Kim, 1980). In this theory, it was proposed that large cutaneous fibres comprise a specific touch system, while small fibres converge on the dorsal horn cells where they summate, and transmit a pattern to the brain, where it is perceived as pain.

Related to this theory of central summation, is the theory of a specialized input-controlling system, which, under normal conditions, prevents summation from occurring. In cases of pathological pain states, this input-controlling system is destroyed. The concepts of central summation and input-control explain many of the clinical phenomena of pain, but are not capable of integrating diverse theoretical mechanisms, such as phantom limb pain.

Gate Control Theory

Melzack and Wall (1965) suggest that all pain information passes through a "gate" situated in or near the substantia gelatinosa in the dorsal horn grey area. Activity in pain-receiving nocioceptive fibres passing through the gate activates a target area and another portion of the dorsal grey matter which sends pain information to higher centres in the brain stem and ultimately, the cerebral cortex. Both A-delta fibres and C pain fibres can activate target cells, and can be inhibited by the cells in the substantia gelatinosa. In order to overcome the screening effect of the "gate," pain fibres send collateral fibres to the cells in the substantia gelatinosa, inhibiting their action. In this way, the gate is left open and pain impulses are transmitted to higher centres. On the other hand, collateral fibres from large myelinated fibres carrying non-painful stimuli (such as joint position) activate the substantia gelatinosa cells, which in turn inhibit the target cells and close the gate. (see Figure 1).

This theory matches some clinical responses to pain. For example, the pain in a stubbed toe is appreciably lessened if the toe is grasped and held. This is because the proprioceptive input to the same


CENTRAL CONTROL SYSTEM
Cognitive-Evaluative
Motor-Mechanism
L fibers
INPUT
S fibers
SG
T
GATE CONTROL SYSTEM
Motivational-Affective
Sensory-Discriminative
ACTION SYSTEM
SG. Substantia Gelatinosa
T: Transmission cells
L fibers: Large fibers
S fibers: Small fibers
- : excitation
-: inhibition

Source: Based on Melzack and Wall, 1965 and Melzack and Casey, 1968.

Figure 1. SCHEMATIC DIAGRAM OF THE GATE CONTROL THEORY OF PAIN MECHANISM

spinal cord level is processing pain information from the injured toe, thus shutting the gate to the painful stimuli.

Another important theory postulated by Melzack and Wall (1965) is that higher control centres in the brain can influence the effect of target cells in the action system by way of descending spinal tracts. The higher cerebral and brain stem centres can influence the volume of pain information allowed to reach conscious levels by opening or closing the gate at the spinal cord level.

Whether the gate control theory is valid, and whether the mechanism of the gate is post-synaptic rather than pre-synaptic inhibition, are now being discussed by pain researchers. It is evident, however, that older concepts of pain information processing in the spinal cord were too simplistic. It would seem increasingly clear that the actual mechanisms are complex and influenced by factors within both the peripheral and higher centres of the central nervous system.

A Critical Evaluation of the Gate Control Theory

The gate control theory has two major dimensions, physiological and psychological. The theory contains several hypotheses in the physiological context including the cells in the substantia gelatinosa, T cells, the mechanism that opens and closes the gate known as the central cortex trigger. Each of these is testable through physiological and histological investigation. In the psychological dimension, the theory recognizes the important function of cognitive variables on pain perception. It suggests that the central control and action systems perform cognitive-evaluative, motivational-affective and sensory-discriminative activities incorporating psychological processes in perception (Kim, 1980). As the gate control theory was the first attempt to place physiological and psychological reasons for pain in juxtaposition, there still remain questions regarding the nature of psychological variables which affect the pain experience. Several psychological variables, for example, anxiety and fear, as suggested in the theory, can be operationally defined to investigate the relationship between these variables and pain perception. Robinson (1980) found a moderate relationship between chronic pain and personality profile in the area of anxiety and depression in a study of patients with rheumatoid arthritis. But Bruegel (1971) found no difference between pre-operative state anxiety and post-operative pain. The personality dimension of augmenting-reducing was found negatively related to pain tolerance (Blitz & Dinnerstein, 1971). Other studies have examined the relationship between pain and variables such as information-giving (Johnson, Rice, Fuller & Endress, 1978; Hayward, 1975), and attention-distraction (Barber & Hahn, 1962; Blitz & Dinnerstein, 1971).

The Relationship Between Individual Characteristics and Pain

Some demographic variables are believed to have associations with psychological variables which may account for a variation in pain experiences. The demographic variables most frequently studied include age, sex, marital status, multiparity, socio-economic status and culture.

Age

Results from studies produce conflicting results with regard to the relationship of age with pain. Age was found to be negatively correlated with pain tolerance, but positively related to pain thresholds according to Bruegel in 1971, and Woodrow in 1972. Further work replicated this finding, first in children (Haslam, 1969) and then with adults (Jacox, 1977). However, it was found that older people experience less pain peripherally, but that deeper somatic pain is unaltered through age groups (Clark & Mehl, 1971).

Sex

It is generally believed by people that males have a higher tolerance and threshold to pain than females (Mulcahy & Janz, 1973; Woodrow, 1972). A laboratory study, in which pain perception and pain tolerance thresholds were studied in men and women across differing age groups, showed that there were differences (Clark & Mehl, 1971). Older women were found to be less able to discriminate between different painful sensations than their male counterparts, whereas there was no difference between sexes in the younger age groups. Several studies in the clinical setting have found that nurses infer that female patients have a lower pain tolerance threshold than male patients (Davitz, Sameshina & Davitz, 1976; Notermans & Tophoff, 1975; Pilowsky, Manzcp & Bond, 1969).

Marital Status

Sociological factors have been investigated in relation to pain tolerance. In a clinical setting, Bruegel (1971) studied the pain tolerance thresholds of married, widowed, divorced and single individuals and found that married people who had the support of their spouse had a higher pain tolerance threshold than the other groups.

Multiparity

Several studies have been conducted on the effect of birth order on the individual's perception of pain. First born children were found to have a lower pain tolerance threshold than subsequent children (Schacter & Singer, 1962; Sternbach, 1968; Sweeney & Fine, 1975), and children from large families had a high tolerance threshold (Sweeney & Fine, 1975).

Socioeconomic Status

Conflicting results from studies of the effect of socioeconomic status on pain tolerance thresholds have been reported. Oberst (1978) found that upper and lower classes experienced more pain than middle classes, while Davitz and Pendleton (1969) found that lower and middle classes experienced more pain than upper classes. The latter reported that nurses inferred that patients from lower and middle classes had a lower pain tolerance threshold than patients in the upper class in society.

Culture

Another demographic variable, culture, has been widely discussed as a factor that may influence an individual's response to pain (Kaufman & Brown, 1961; McMahon & Miller, 1978; Sternbach, 1968; Woodrow, 1972). In his classical study, Zborowski (1969) discussed the pattern of pain responses of four cultural groups in North America, and reported that the Old American stoically bears pain, the Negro American a little less stoically, while Jewish and Italian Americans are more verbal and vocal when in pain. Two studies (Davitz & Pendleton, 1969; Davitz et al., 1976) showed that nurses from different countries assessed their patients differently. Nurses who inferred that their patients had the most pain came from Puerto Rico, with nurses from Korea next highest, then Thailand, Taiwan, Japan and finally the U.S.A. with American negro nurses inferring their patients having the least pain. In other words, nurses from the U.S.A. who rated their patients as not experiencing much pain inferred their patients had higher pain tolerance thresholds than the nurses from the four eastern countries, and the Puerto Rican nurses inferred that their patients' pain tolerance threshold was lower than the other five groups. As Zborowski (1969) wrote, "our perception of pain is modified by our past experiences, by our expectations and our culture" (p. 3).

Thus, it has been found that many factors affect an individual's response to the pain experience. Melzack and Casey (1968) stated that past experience was one of the factors that had a most profound effect on the individual's response to pain. This belief was upheld by McCaffery (1979) who cited this as one of the psychological determinants of a person's response to pain. The meaning of pain to the sufferer, expectations and prognosis affect pain responses. Beecher (1975) illustrated this point in his research during war. He found that soldiers wounded in combat required very little analgesia, compared with civilians with similar wounds. The meaning of the wound to the soldier, suggested Beecher, was that he would be removed from danger, whereas to the civilian, it had a very different connotation. In a study of the meaning of different surgical procedures to patients in relation to pain, McMahon and Miller (1978) reported that women undergoing Caesarian sections complained of very little pain compared with patients having tonsillectomies and extraction of wisdom teeth. Related to these findings were those concerning inferences nurses made of patients' pain. Davitz and Pendleton (1969) found that nurses based their inferences on the pathology causing the pain, and viewed patients with burns as suffering more pain than patients with depression, leukaemia or diabetes. Oberst (1978) found that the more "visible" the pathology, the more "visible" the patient's response to pain, the higher the level of pain assessment made by nurses.

Thus pain is a multi-dimensional phenomenon, and an individual's response to it is based on many intervening factors. These intervening variables not only influence the behaviour of the person experiencing the pain but they also influence the assessment of the beholder. Health professionals tend to judge pain behaviour in others against how they consider a person should behave (Hackett, 1971; Strauss, Fagerhaugh & Glaser, 1974; Wiener, 1975).

In conclusion, a review of the literature revealed a number of theories of pain and conflicting research findings on the effect of variables on the individual's pain experience. In this study, the two components of pain, sensory and reactive, as postulated by Sternbach (1968) were measured and the effect of certain variables, including age and culture, on the individual's pain were studied. The major independent variable under investigation was the effect of the nurse-patient relationship on the patient's perception of pain.

Theoretical Background of Nurse-Patient Relationships

Few nursing studies have investigated the relationships which nurses establish with patients. Most research in this area has been done in the counselling field with psychiatric patients with the primary emphasis having been directed to the therapeutic interaction.

Several authors have written about the therapeutic relationship (Brammer, 1973; Wiedenbach, 1964). The theoretical basis for this research is found in Carl Rogers' (1961) theory of interpersonal relationships. Rogers postulates that if the health professional is able to develop a certain type of relationship with the client, the latter will discover, within himself, the capacity to use the relationship for growth, resulting in change and personal development.

Rogers (1961) discusses three qualities that he believes the health professional needs to bring into an interpersonal relationship before change can occur. The first condition, genuineness, implies that the health professional needs to be aware of his own feelings, rather than presenting a facade of one attitude, while actually holding another at a deeper or subconscious level. Even though some feelings would appear non-conducive to a positive relationship, Rogers maintains that it seems to be extremely important that the helper appears real to the client.

The second condition necessary in the helping relationship is described by Rogers as unconditional regard. The more acceptance and positive feelings the health professional experiences for his client, the more use the created relationship will be to him. Acceptance, Rogers believes, means a warm regard for the patient as a person of unconditional self-worth, a person to be valued, no matter what his condition, his behaviour or feelings are. It means a respect and liking for the patient as a separate person, and a willingness on the part of the health professional to accept whatever feelings the patient has as legitimate and important. It means an acceptance and regard for his attitudes of the moment, no matter how positive or negative. This acceptance of each fluctuating aspect of the other person makes it, for the client, a relationship of warmth and safety. Safety in being liked and respected as a person seems to be a highly important element in establishing relationships with patients.

The third condition described by Rogers (1961) is a continuing desire to understand, a sensitive empathy to the patient's feelings, and communications as they seem significant to him at that moment. Acceptance does not amount to much until it involves understanding. It is only when the health professional understands the feelings and thoughts of the patient, and sees them as the patient sees them, that the latter feels free to explore his experiences. This freedom is an important element in the nurse-patient relationship.

Thus, the relationship that Rogers has found helpful, is characterized by a transparency on the part of the health professional, in which his real feelings are evident to the other person, and by an acceptance of this other person as a valued individual, and by an empathic understanding in which he is able to see the person's world through his eyes. When these conditions are achieved, the health professional is capable of becoming a support, allowing the other person to develop his own potential.

In order to develop this support system to a patient, Rogers believes that the more congruence there is on the part of one individual towards experience, awareness and communication, the more the ensuing relationship will involve a reciprocal communication. This will result in a tendency towards more mutually accurate understanding of communication, and an improved psychological adjustment and functioning in both parties. It is the perception of the receiver of the communication which is crucial.

This relationship as described by Rogers, has been suggested as the basis of a theoretical framework for patient-centred nursing.

Gunter (1962) suggests that the patient has the capacity to experience and understand those aspects of his life which are causing him maladaptation or pain, and is capable of re-organizing himself and his relationship to life to attain more optimal functioning and health. She proposes that these latent capacities will be facilitated by a positive experience in a helping relationship. Furthermore, Gunter puts forward the hypothesis that in order to establish a suitable psychological climate, the nurse should (a) establish a relationship with the patient; (b) experience unconditional regard for the patient; (c) be genuine in the relationship; (d) experience an empathic understanding of the patient's point of view; and finally (e) respect the patient as a person capable of understanding his situation and participating in his treatment. These conditions should provide a suitable climate in which the patient is free to utilize all his energy for recovery from disease or pain.

The Therapeutic Effectiveness of Nurses

Jourard (1964) believes that nurses are in a position to promote growth and personal development in their patients by an empathic acknowledgement of what the patient expresses. Nurses, he has found, are usually lacking in this quality, having rigid interpersonal relationships with their patients. Truax, Altmann and Millis (1974) reported the scores on three characteristics of a helping relationship, namely empathy, genuineness and level of regard for samples of 13 occupational groups. The lowest mean group scores were obtained from registered nurses and manufacturing plant supervisors. These results of Truax et al. (1974) have been substantiated in other studies in which professional groups including teachers, nuns, social workers, doctors and nurses have been compared. Doctors and nurses are rated lowest in empathy (Baer, Davitz & Lieb, 1970; Duff & Hollingshead, 1968; Lenburg, Glass & Davitz, 1970).

Jourard (1961, 1964) suggests that nurses' practice is often harmful to patients. Kurtz & Grummon (1972) found that if empathy is perceived as low by patients, the outcome of the encounter is actually detrimental. In a study in which over 1,000 nurses were interviewed, Rituo (1963) found that nurses were insufficiently prepared during their training to react in an understanding and non-judgemental manner to their patients. This finding is supported by the results of a study in which four groups of nurses were asked to rate the importance of maintaining desirable and useful interpersonal relationships with their patients. A group of staff nurses rated this behaviour 30 out of a possible 100, a nursing supervisory group rated it 35%, a group of graduates from a university nursing programme, 26%, and a faculty of another nursing programme, 100% (Coe, 1967).

Studies have shown that registered nurses and nursing students score low on attributes which are considered necessary for therapeutic effectiveness (Cohen, 1965; Lentz & Michaels, 1965; Levitt, 1962; Navran & Stauffacher, 1958; Peitchinis, 1972). In a study of personality variables associated with therapeutic effectiveness, Stein (1969) reported that he found no significant difference between nursing students because of religion, nationality, socio-economic group or clinical interest group. Davitz and Pendleton (1969), however, found a significant difference in inferences of patient suffering among nurses of different cultural groups and in different clinical areas. Lenburg et al. (1970) raised the question, were the personalities of individuals who were attracted to the medical and nursing professions actually low in empathy? However, it has been shown that nurses can increase their empathic skills through educational programs (Kalisch, 1971). A programme composed of lectures, role-playing, experimental training and an empathic role model, resulted in a statistically significant improvement in empathic skills, which were maintained over time.

Several extraneous variables that affect the level of therapeutic effectiveness in a helping relationship have been isolated and investigated. Investigators found that the longer a nurse had been in practice, the less empathic she becomes to her patients (Forsyth, 1979; Truax et al. 1974). The more education the nurse has and the higher her position in the organization, the more empathy she feels for patients (Forsyth, 1979). Nurses who are older, and have not had children, are perceived by patients to be less empathic (Forsyth, 1979). Forsyth (1979) also identified a trend showing that male nurses were more empathic than female nurses.

Other studies have suggested that it may be due to the demands that the organizational structure placed on the nurse that has a profound effect on her ability to establish effective relationships with her patients (Copp, 1974; Forsyth, 1980; Graffam, 1970). The authors suggest that the system may be so organized that the nurse, being fully occupied with non-nursing activities, has no time to establish a meaningful relationship with her patients.

Experimental approaches to nursing practice involving the characteristics of nurse-patient relationship are becoming evident in the literature. Elms and Leonard (1966) studied the effect of different nursing approaches during patients' admission to hospital on the patients' level of distress. They found that patient-centred nursing has a greater positive effect on patients than task-oriented nursing. Johnson, Kirchoff and Endress (1975) studied the relationship of the nurse-patient interaction on the reduction of anxiety in children having an orthopedic cast removed. They found that if the children were prepared with an explanation about the procedure combined with a description of the sensation, the intensity of emotional response during the threatening event was reduced. Peitchinis (1965) investigated the importance of psychological care of the pre-operative patient to the successful outcome of surgery, and found that variables such as length of stay in hospital and infections were reduced. In another study, Dumas and Leonard (1963) investigated the effect of different approaches to pre-operative nursing care on post-operative vomiting. The experimental nursing care was directed towards helping the patient attain a suitable psychological state for surgery. These investigators found that in the experimental group, patients had a lower incidence of post-operative vomiting.

In the field of nursing education, several studies have been conducted to measure the effect on students' achievements when the students perceived their instructor as highly empathic (Brundik, Thurston & Feldhusen, 1967; Rosendahl, 1973). It was found that those students who perceived their instructors as highly empathic, were high achievers and were themselves perceived as highly empathic.

Several studies have explored the effect of empathy in communication. Stetler (1977) found no significant relationship between highly empathic nurses, as perceived by patients, and verbal and vocal communication. She queries whether a third factor, tone of the communication, in conjunction with verbal and non-verbal communication contributes to the perception of a person as being highly empathic. Mansfield (1973) studied verbal and non-verbal behaviours that might be congruent with perceived highly empathic behaviour and found that gestures, facial expressions, touching hands and posture shifts conveyed a greater sense of empathy. In a study of nurse-nurse communication, Northouse (1979) found a strong negative correlation between trust and empathy. What the data suggest is that nurses who exhibited lower levels of trust, exhibited higher levels of empathy. That is, nurses who tended to be distrustful of their peers also tended to score higher on the empathy measure.

The Nurse-Patient Relationship in Relation to Pain and Distress

Of the many research studies investigating the effect of nursing intervention on patients' experiences and recovery, very few have identified and measured the nature of the nurse-patient relationship as the intervening variable. Studies of the effect of information-giving have revealed that when patients are given information about their care and treatment, they experience less pain and distress (Hayward, 1975; Johnson, Dabbs & Leventhal, 1970). Graffam (1970) in a phenomenological approach to the study of pain found that nurses' responses to patients in pain and distress were such that the needs of patients were not met compassionately and effectively. In an exploratory study, Quayhagen (1977) found that if the patient's perception of his own pain is communicated, there is congruence when there is reciprocal communication from the nurse, and concensus of agreement. In a similar study, Pilowsky, Manzcp and Bond (1969) found that there was a lack of congruence between the rating of the patient's pain by the nurse and the patient.

Oberst (1978), in a study of nurses' inferences of patients' suffering, suggests that nurses have a preconceived idea of how much suffering a patient with a certain type of pathology should experience. She found that nurses appeared to lack knowledge on which to build a framework for the concept of suffering. Because of this, she suggests that nurses are not able to measure new situations, and are apt to misunderstand the behaviour of the sufferer who deviates from the expected pain trajectory. She recommends that nurses be educated to identify and respond empathically to suffering patients.

In a study of first and second year nursing students, Lenburg, Burnside and Davitz (1970) found that there was a significant difference between the inferences of the two levels of students of patients' physical pain and psychological distress. Both groups rated the patients as suffering more distress than pain, but the first year students inferred that the patients had more pain than the second year students inferred. Lenburg et al. (1970) suggests that there is a change in the students' attitude over time probably due to the influence of significant others including the staff nurses.

In an experimental study of the effect of deliberative nursing action on the pain relief in patients, Moss and Meyer (1966) found that if three actions were taken by the nurse including: (1) asking how the patient felt; (2) discussing various aspects of pain and methods of alleviation; and (3) allowing the patient to decide on a method to relieve his pain, the patient received relief from moderate pain.

In conclusion, the theoretical base of the therapeutic relationship for this study rests on Rogers' (1961) theory of interpersonal relationships. Several variables that have been found to affect the relationship were discussed including culture, age, length of experience and seniority. Studies were cited in which varying nursing interventions were investigated with regard to their effect on patients' pain and recovery. In this study, the investigator used a questionnaire based on Rogers' theory of interpersonal relationship in order to measure the patient's assessment of the relationship which exists between her nurse and herself and whether that has any effect on her perception of pain.

CHAPTER III

METHODS AND PROCEDURES

Nature and Design of the Study

This investigation was a pilot project, mainly descriptive and exploratory in nature, and involved the testing of instruments to measure patients' perceptions of pain and distress, and the nature of the relationship developed between nurse and patient. Pain and distress were explored primarily as dependent variables and the nature of the relationship as an independent variable. Descriptive data on patients' age, diagnoses and ethnic groups, and nurses' age, sex, marital status, multiparity, length of nursing service and level of nursing education completed were also obtained.

Overall Research Strategy

Use of Survey Technique.

In this study, a sample was chosen from a population to investigate the incidence, distribution and relative interrelations of sociological and psychological variables. Sociological facts under examination included age, ethnic group, education, occupation and marital status. The psychological variables of interest included the opinions and attitudes of nurses and patients in a population on the one hand, and the behaviours of the patients on the other. The sociological variables were then related to the psychological variables.

Data from Nurse-Patient Pairs.

Personal interviews and controlled observations were the principal methods of collecting data. Factual information was also collected by the investigator and entered on a face-sheet at the beginning of the interview. Each respondent was then required to complete a structured questionnaire which was divided into two sections. The first section required both the nurse and the patient to rate the amount of pain the patient was experiencing, and how much distress it was causing her. The second section consisted of a 64-item questionnaire, in which the nurse and the patient were required to rate the relationship that existed between them.

Instruments Used for the Measurement of Pain.

Some of the difficulties of measuring pain have already been discussed in Chapter II. For this study, the operational definition of pain as described by Beecher (1975) was adopted. He described pain as having two qualities: (1) sensory, describing the pain in terms of temporal, spatial, pressure and thermal distributions; and (2) reactive, describing fear, anxiety, and cognitive processes which were part of the pain experience. To measure the sensory quality of pain, the Hayward Pain Thermometer (Hayward, 1975) was used. The reactive component of pain was measured by the Johnson Distress Scale (Johnson & Rice, 1974). In both instruments, a subjective state was utilized, in accordance with the hypothesis, pain is whatever the experiencing person says it is (Sternbach, 1968). In addition to these two instruments used by both the nurse and the patient in each nurse-patient pair, the Chambers-Price (Chambers & Price, 1967) Pain Rating Scale was used by the investigator as a means of validating the former instruments.

The sensory component of the pain experience was measured by the Hayward Pain Thermometer. Both patient and nurse of each pair of subjects were asked to rate pain separately. Using a felt pen, the patient marked up on a five-point scale, her subjective estimation of the pain she was experiencing, whereas the nurse using the same five-point scale recorded her objective evaluation of the patient's pain. Both were asked to indicate their ratings of the pain by shading the appropriate "temperature" on a vertical scale. The lowest point or "temperature" on the scale was shaded if the patient had "no pain at all," and the highest point was shaded if "the pain was as much as the patient could bear." Points on the scale between these two extremes were shaded to indicate "a little pain," "quite a lot of pain" and "a very bad pain." This colloquial phraseology was developed from replies made by hospital patients who were asked how much pain they had (Hayward, 1975) (see Appendix A).

The reactive component of the pain experience was measured by the Johnson Distress Scale. Respondents were asked to conceptualize the pain experience as a physical sensation with levels of intensity, and make an independent judgment on how much distress was caused by the sensation. Sensation was explained to the subject as the "physical feel of the pain" and distress as "how much these sensations bother you/her." While these two components are highly correlated, they do act differentially, and can be analyzed separately. In this study, the Johnson Distress Scale was revised on the advice of a group of nurses who had been asked to assess its appropriateness. They recommended that the word distress was not widely used by patients, and a more colloquial expression "upset" used on a five-point scale would be more acceptable (see Appendix A).

An independent estimation of the patient's pain and distress was made by the investigator using the Chambers-Price Pain Rating Scale (see Appendix B). The scale was made up of nine observations, eight of which were directed to the estimation of sensory pain and one to reactive pain. During the interview on the third day after surgery, the investigator directed questions to the patient regarding the amount of pain and anxiety she had. The remaining seven categories that included observation of attention, verbal and vocal behaviour, skeletal muscle response, perspiration, and nausea were completed by visual observation.

Instruments Used for the Measurement of the Nature of the Nurse-Patient Relationship.

It was not until 1958, that studies of changes in personality through therapeutic relationships were published. The means by which the association between a client and a health professional led to a constructive change in the personality of the client were also discussed. The theoretical formulations of Rogers (1965) formed the framework for the "Relationship Inventory", a systematic tool for measuring the degree of an interpersonal relationship developed by Barrett-Lennard (1969) (see Appendix C). The basic postulate of the Relationship Inventory is that it is the client's experience of the health professional's response that is of primary importance in the therapeutic influence in their relationship. The presumption is that whatever the client experiences directly affects him. Therefore, the relationship as experienced by the client, rather than the health professional, will be related to the outcome of therapy. Logically, the most reliable evidence to be obtained is the client's report of his actual experience.

The Relationship Inventory developed by Barrett-Lennard (1969) is made up of four components: level of regard, empathy, unconditional regard and congruence. The theoretical concepts, "congruence" and "empathic understanding," correspond closely to definitions by Rogers (1965). The remaining two concepts, "level of regard" and "unconditionality of regard" were developed by Standl (1954) and later adopted by Rogers, replacing his "acceptance" (Rogers, 1975). Level of regard refers to the affective aspect of one person's response to another. It includes both positive feelings of respect, liking and appreciation of the other person as well as negative feelings of dislike, impatience and contempt for the other person. Unconditionality of regard, however, measures the degree of variability that exists in one person's affective response to another.

The Relationship Inventory was used in this study in its unabridged form. Sixteen statements had been developed for each of the four components of the helping relationship; level of regard, empathy, congruence and unconditionality of regard, comprising a total of 64 statements. Of each 16, eight were phrased in a positive format, and eight, negatively. For each statement, a choice of six replies was offered: +3: strongly true; +2: true; +1: probably more true than untrue; -1: probably more untrue than true; -2: not true; and -3: strongly not true. Careful instructions were given to each subject on the rating system and a card was made to facilitate answering on which the rating system was printed in large type.

Target Population and Sample

The target population for this study was restricted to female adult patients, undergoing an elective cholecystectomy or an elective abdominal hysterectomy for non-malignant pathology in a large university teaching hospital, and those female registered nurses and registered nursing assistants caring for them. Patients excluded from the study were those who were unable to read or understand English, and those undergoing either more extensive surgery or more than one procedure. Any patient with a known or suspected psychological disorder was not included in the target population. A convenience sample of patients and nurses was obtained during the month in which data collection took place. Specifically, 30 patients scheduled for elective cholecystectomy or abdominal hysterectomy, who met the criteria for the study were included in the sample. No effort was made to select or assign subjects randomly because of practical constraints inherent in sample selection and size. Data were collected on the third post-operative day because of a concern voiced by the area clinical supervisors regarding the ability of patients to respond comfortably to questionnaire items at an earlier post-operative period.

Examination of the Reliability and Validity of Measurement Instruments

Reliability.

Reliability as described by Maguire and Hazlett (1969) refers to the extent to which the same response would be achieved at a different time, in a different space, or by a different method, in other words, the degree of consistency of the measure.

Reliability of Pain Measurement Instruments.

If defining pain is difficult, measurement of it is even more so. Patients' pain is subjective and prone to constant and unpredictable change. It is therefore not surprising that test-retest methods of pain measurement present inherent problems of unreliability. Consequently, several methods of measuring pain have been used in the clinical setting, including measuring changes in blood pressure, temperature, pulse and respiration, as well as patient questionnaires (Diers, Schmidt, McBride & Davis, 1972; Moss & Meyer, 1966). In this study, the Hayward Pain Thermometer was used to measure the sensory component of pain. Hayward (1975) reported a reliability of .28 in his pain study. Reliability of the Johnson Distress Scale was not reported (Johnson & Rice, 1974). The reliability of the Chambers-Price pain rating scale used by the observer in this study was not reported in the literature (Chambers & Price, 1967).

Several studies have determined the reliability of the Barrett-Lennard Relationship Inventory (BLRI) in a variety of settings. Barrett-Lennard (1969) reported reliability estimates of 0.88 (Level of Regard), 0.86 (Empathic Understanding), 0.86 (Unconditionality of Regard), 0.92 (Congruence), and 0.92 (Total Score) based on product-moment correlations between test and retest scores. Hollenbeck (1965) obtained split-half reliabilities ranging from 0.83 to 0.95 for the four BLRI scales. Again, Snelbecker (1967) reported split-half reliability coefficients ranging from 0.75 to 0.94 for the four principal BLRI scales. Over 60 studies have been published using the BLRI as a tool for measuring interaction between two individuals. These studies have been compiled and edited by Gurman (1977). In this study, reliability was estimated by using split-half correlations of the BLRI, with revision of the coefficients using the Spearman-Brown formula.

Validity.

Four types of validity commonly described are face, content, criterion-referenced and construct validity. Face validity refers to the meaningfulness of items to the respondents and whether it is reasonable and relevant, despite the fact that the instrument may or may not appear to measure what is intended. Content validity is the degree to which the content that the instrument is measuring is representative of the universe of items (Kerlinger, 1973). Criterion-referenced validity is established by studying the relationship between the test scores and those external criteria known to measure the attribute under study (Kerlinger, 1973). Construct validity is determined by the degree to which hypothesized variables (constructs based on theoretical knowledge) can explain the variance in scores of the respondents. In this approach one seeks to validate both the measuring instrument and the theory behind the test (Cronbach & Meehl, 1955).

Validity of the Pain Measurement Instruments.

Face validity of the three pain measuring instruments was assessed by six clinical nurse experts. The validators were asked to evaluate the instruments for clarity, relevance, understanding and completeness. Based on their recommendations, modifications were made to wording and content. Content validity was determined by a group of nurse-practitioners to ensure that the content the instruments were measuring was representative of the universe of items regarding pain. As there is no other established way of measuring pain, criterion-referenced validity could not be established. However, concurrent validity, defined as the degree of consistency of a test with regard to a criterion measure (Cronbach & Meehl, 1955) was determined by correlating the scores of the nurse with the nurse-observer.

Validity of the Relationship Inventory.

Face validity of the BLRI was also determined by nine patients and 11 nurses for clarity, relevance, understanding and completeness. All items that were not determined as appropriate in the acute surgical setting by three or more validators were discarded.

In order to determine construct validity of the BLRI, factor analysis was used as a descriptive technique. The objective was to identify the extent to which empirical factors in this study would match the major attributes as postulated by Barrett-Lennard (1969). The assumption underlying this analysis was that the items in the questionnaire measuring the same hypothesized concepts would tend to correlate and show up in factor solutions as loadings on the same factor. Each of Barrett-Lennard's hypothesized variables, level of regard, empathy, unconditional regard and congruence, was analyzed separately. The items measuring each of the variables were isolated, and those explaining the greatest amount of variance and appearing logical and interpretable, were selected.

Barrett-Lennard has not used factor analytic procedures in further refining the Relationship Inventory (Barrett-Lennard, 1978). He maintains that there are aspects of variation (1) in specific item composition of the same factor and (2) in exact factorial structure, both within and between the data analyzed by each investigator. One explanation the author gives for item variation is that in any sample, some items are "idlers". However, extensive work has been done by Lietaer (1976) and Bebout (1972) which corresponds substantially to the original four Relationship Inventory scales. Walker and Little (1969) computed factor analysis and obtained three significant factors which they interpreted as "non-evaluative acceptance," "psychological insight," and "likability."

Data Collection Procedure

The method of data collection was by separate interview with each patient and each nurse. The interviews were conducted by the researcher, and lasted for approximately 20 minutes per subject. Guidelines were prepared in an effort to obtain consistency in giving directions for completion of the questionnaire (see Appendix D).

In order to select patients for the study, the researcher went to the operating room to obtain names of patients scheduled for either an elective cholecystectomy or abdominal hysterectomy for the following day. The nurses in charge of the nursing units were approached and asked if those patients so identified were suitable for the study. Before data collection, each selected patient was interviewed by the researcher to obtain consent for the study. Data were collected on the patient's third post-operative day, from both the patient and the nurse.

Certain constraints were placed on the use of the instruments in the study. Ideally, the patient and nurse were required to have completed the questionnaires at the end of the nurse's shift, allowing the maximum amount of time for a relationship to become established. In the clinical situation, this was not always possible because the patient quite often had visitors and the nurse had charting duties to complete. The researcher found that it was more convenient for the patient and nurse to be given instructions concerning completion of the questionnaire, and be allowed to do it at their convenience during the shift. Standardized instructions given at this time included emphasis on the fact that the questionnaire was an opinionnaire, and not a search for the "correct" answers (see Appendix D). The investigator completed the observer's pain rating form following her interview with the patient.

Ethical Considerations.

The research proposal was submitted to the University of Alberta Hospital Scientific and Ethical Review Committee for Nursing Research, and to the Special Services and Research Committee for consideration of ethical aspects in relation to collection of data in the clinical area. Suggestions made by the committees were incorporated into the design, and the project was approved. Meetings were then arranged between the area nursing supervisors, nursing unit supervisors and the researcher in which the methodology of the data collection was discussed and convenient days and times were approved. The unit supervisors agreed to brief their nursing staff about the impending data collection, emphasizing its contribution to the increase of knowledge in clinical nursing, and the voluntary nature of the nurses' participation.

Prior to the initial interview with the patient, verbal or written consent of each surgeon was obtained by the investigator (see Appendix E). At the initial interview, the patient was asked if she would like to participate in a clinical nursing research project. If she accepted, the precise nature of the project was explained to her. It was described as an investigation of the influence of the nurse-patient interaction on the patient's post-operative discomfort. The patient was told that the researcher would return on the third day after surgery and if the patient was still willing to take part, and was feeling well enough, that she would be required to sign a consent form, and complete a questionnaire. The patient was assured of the voluntary nature of the project, that all information would be kept confidential and her anonymity protected (see Appendix F).

On the third day after surgery, the researcher returned, and having received consent from the patient, she then asked the nurse caring for the patient during the shift if she would be willing to participate in the study and a similar description of the project as given to the patient was outlined to the nurse. Participation was stressed as voluntary. The nurse also was assured that all information would be kept confidential, and that her identity would not be revealed. The nurse was required to sign a consent form (see Appendix F).

One patient, several nurses and doctors and the two ethical review committees showed an interest in the findings of the study. They were assured by the researcher that a report of the findings would be forwarded to them upon completion of the project.

Data Analysis

The arithmetic sum of 1-5 scale responses to the "sensory" component of pain comprised the measure of patients, nurses and the observer assessment of the degree of pain the patient was experiencing. The "reactive" component of the patient's pain experience was calculated in the same way. All further analyses of pain were based on these scores.

Scores for the level of relationship between each patient and her nurse were calculated from a composite of the patient's responses to the 64-items intended to measure the four variables, level of regard, empathy, unconditional regard and congruence. Data analysis of the nurse-patient relationship was based on these scores.

Descriptive Analysis.

Descriptive analysis of the sociological variables of the two groups of respondents, patients and nurses, was carried out in which frequencies of the various categories were tabulated.

Data from the instruments measuring pain and distress were analyzed first. Correlations between sociological and psychological variables were computed followed by analysis of variance of pain and distress.

Reliability of the three pain instruments was computed using alpha coefficient for continuous variables. Concurrent validity of the three instruments was measured using Pearson product moment correlations.

The second section of analyses included several tests performed on data collected from patient-nurse ratings of the relationship established between them. In order to replicate previous work, factor analyses of the Relationship Inventory was carried out. The degree of reliability of the inventory in this study was computed using Spearman-Brown split-half technique. Construct validity was computed using factor analysis.

In the third section of data analysis, the relationships between the psychological variables of pain and distress with the psychological variables of the Relationship Inventory were correlated. In an attempt to establish the best predictor of pain and distress, multiple regression analysis was used.

Methodological Limitations of the Study

A major limitation of this study was the method employed to select patients and nurses for the sample. Due to constraints of practicality, it was not possible for the researcher to obtain a probability sample of patients and nurses. Instead a convenience sample of patients who were willing to participate and the nurses caring for them was used. Because of these sampling limitations, any results presented in this report must be treated as descriptive only of the sample included in the study, and generalization must be done with due care. A second major limitation was the size of the sample. As this project was a pilot study, in which instruments were tested for their appropriateness, the size of the sample was too small to establish significant results. Further research using a larger sample is indicated.

A third limitation of the study was the length of the Relationship Inventory questionnaire. Post-operative patients found it exacting to complete. Apart from that, another serious limitation regarding the internal validity of the questionnaire was the fact that nearly every patient said that she did not know who her nurse was for that day, or that she had only met her once during the shift. Most of the patients felt unable to answer some of the questions in the inventory, with any certainty.

CHAPTER IV

RESULTS AND DISCUSSION

The material presented in this chapter is divided into six sections, the first of which contains a description of the patients and nurses who participated in the study. The second section is comprised of reports of the relationships found to exist between the patients' and nurses' ratings of patients' pain and distress, and of relationships between psychological and sociological variables. In the third section, reliability and validity testing of the instruments measuring pain and distress is reported. The fourth section contains the results of factor analyses of the Barrett-Lennard Relationship Inventory, while the degree of reliability and validity of the inventory used in a surgical nursing area is reported in the fifth section. Finally, the association between the patients' assessment of their pain and distress with their assessment of the interaction established between themselves and their nurses is discussed.

Table 1 explains the categorization of the variables used in this study.

Description of the Participating Patients and Nurses

Thirty female adult patients were interviewed, 15 of whom had had an elective cholecystectomy and 15 an abdominal hysterectomy. Of these patients, 17% were between the ages of 20 and 29, 30% between 30 and 39, 27% between 40 and 49 and 27% were 50 years or older (see Table 2). Respondents were fairly well distributed among the four age categories. However, with ethnic groups, 47% of the respondents

TABLE 1

CATEGORIZATION OF VARIABLES

Category	Variable Code	Description	Scale
1	PRSP	Pain rating score by patient	1-5
	PRSN	Pain rating score by nurse	1-5
	PRSO	Pain rating score by observer	1-5
2	DRSP	Distress rating score by patient	1-5
	DRSN	Distress rating score by nurse	1-5
	DRSO	Distress rating score by observer	1-5
3	BLRI	Barrett-Lennard Relationship Inventory	1-7

TABLE 2

DISTRIBUTION OF PATIENT RESPONDENTS BY AGE CATEGORY

Age Category	Code	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)	Cumulative Frequency (Percent)
20 to 29	1	5	16.7	16.7	16.7
30 to 39	2	9	30.0	30.0	46.7
40 to 49	3	8	26.7	26.7	73.3
50 and over	4	8	26.7	26.7	100.0
TOTAL		30	100.1	100.1	

were from North American origins, 40% from Northern European countries, 7% American Indians and 7% Oriental (see Table 3). Due to the disparity of respondents in two cells, the variable "ethnic groups" was not used in the statistical analysis.

The total number of registered nurses and registered nursing assistants who participated in the study was 30. Of this group, 50% were between the ages of 20 and 29, 20% between 30 and 39, 20% between 40 and 49 and 10% were 50 years or more (see Table 4).

The largest proportion of respondents fell in the youngest age group, and there were only three respondents in the 50 and over category. Seventy percent of the respondents were married, 23% single and only 7% divorced (see Table 5). Only one third of the respondents had children (see Table 6). Clearly, the large proportion of respondents were young, married women with no children.

Of the total nursing personnel sample, 40% were hospital-trained registered nurses, 13% college-trained registered nurses, 30% post-basic baccalaureate registered nurses, and 17% were registered nursing assistants (see Table 7). In the distribution of years of nursing experience, 43% of the respondents had less than two years experience, 30% had three to five years, 17% had six to 10 years and 10% had more than 10 years (see Table 8).

In summary, 70% of the nurse respondents had a hospital-based training with or without university education, and 73% had been in practice for five years or less.

The proportions of the ethnic composition of the nurse respondents was similar to that of the patient respondents; 70% were of North American extract, 27% North European, 3% Oriental, and there were

TABLE 3

DISTRIBUTION OF PATIENT RESPONDENTS BY ETHNIC GROUP CATEGORY

Ethnic Group Category	Code	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)	Cumulative Frequency (Percent)
N. American	1	14	46.7	46.7	46.7
N. European	2	12	40.0	40.0	86.7
Am. Indian	3	2	6.7	6.7	93.3
Oriental	4	2	6.7	6.7	100.0
TOTAL		30	100.1	100.1	

TABLE 4

DISTRIBUTION OF NURSE RESPONDENTS BY AGE CATEGORY

Age Category	Code	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)	Cumulative Frequency (Percent)
20 to 29	1	15	50.0	50.0	50.0
30 to 39	2	6	20.0	20.0	70.0
40 to 49	3	6	20.0	20.0	90.0
50 and over	4	3	10.0	10.0	100.0
TOTAL		30	100.0	100.0	

TABLE 5

DISTRIBUTION OF NURSE RESPONDENTS BY MARITAL STATUS CATEGORY

Marital Status Category	Code	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)	Cumulative Frequency (Percent)
Married	1	21	70.0	70.0	70.0
Single	2	7	23.3	23.3	93.3
Divorced	3	2	6.7	6.7	100.0
TOTAL		30	100.0	100.0	

TABLE 6

DISTRIBUTION OF NURSE RESPONDENTS BY CHILDREN CATEGORY

Children Category	Code	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)	Cumulative Frequency (Percent)
Yes	1	10	33.3	33.3	33.3
No	2	20	66.7	66.7	100.0
TOTAL		30	100.0	100.0	

TABLE 7

DISTRIBUTION OF NURSE RESPONDENTS BY LEVEL OF EDUCATION

Nursing Education Category	Code	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)	Cumulative Frequency (Percent)
Hospital R.N.	1	12	40.0	40.0	40.0
College R.N.	2	4	13.3	13.3	53.3
B.Sc.N.	3	9	30.0	30.0	83.3
R.N.A.	4	5	16.7	16.7	100.0
TOTAL		30	100.0	100.0	

TABLE 8

DISTRIBUTION OF NURSE RESPONDENTS BY YEARS OF NURSING EXPERIENCE

Length of Service Category	Code	Absolute Frequency	Relative Frequency (Percent)	Adjusted Frequency (Percent)	Cumulative Frequency (Percent)
1-2	1	13	43.3	43.3	43.3
3-5	2	9	30.0	30.0	73.3
6-10	3	5	16.7	16.7	90.0
More than 10	4	3	10.0	10.0	100.0
TOTAL		30	100.0	100.0	

no North American Indian nurses. Consequently, as the sample was not uniformly distributed within the four categories, ethnic group was not included in the statistical analyses.

Relationships Between Pain, Distress and Demographic Variables

The intercorrelations of PRSO and DRSO, PRSN and DRSN, and PRSP and DRSP (see Table 1) are presented in Table 9. PRSN correlated significantly with PRSO. This was to be expected as the observer was a nurse herself, and presumably the nurse and nurse observer were using similar methods in determining how much pain the patient was experiencing.

In this study, PRSP did not correlate significantly with either PRSN or PRSO. In other words, the objective assessments of someone else's pain did not compare closely with the subjective assessment of the amount of pain the person was experiencing. This was not unexpected in view of the subjective nature of pain as defined earlier. On the other hand, DRSP, DRSN and DRSO correlated "significantly." Thus, it appears that the objective ratings of the nurse and observer of the level of distress the patients in pain were experiencing are more consistent than their ratings of the sensory component of pain.

Significant correlations existed between the patients' pain ratings and patients' distress ratings, between the nurses' pain and nurses' distress ratings, and between the observers' pain and distress ratings.

Differences in Pain Rating Scores

As given in Tables 10 and 11, analysis of variance on PRSP revealed no significant differences among the four age groups and two

TABLE 9

PEARSON CORRELATION BETWEEN MAJOR VARIABLES

PATIENT, NURSE, OBSERVER RATINGS OF PAIN AND DISTRESS

	Nurse Pain	Patient Pain	Observer Pain	Nurse Distress	Patient Distress	Observer Distress
Nurse Pain	1.000	0.241	0.522*	0.488*	0.267	0.500
Patient Pain	0.241	1.000	0.059	-0.081	0.287*	-0.138
Observer Pain	0.522*	0.059	1.000	0.629	0.324	0.664*
Nurse Distress	0.488*	-0.081	0.629	1.000	0.366*	0.539*
Patient Distress	0.267	0.287*	0.324	0.365*	1.000	0.333*
Observer Distress	0.500	-0.138	0.664*	0.539*	0.333*	1.000

*Denotes significance at .05 level.

TABLE 10

ANALYSIS OF VARIANCE ON PATIENT PAIN USING PATIENT AGE AND TYPE OF SURGERY AS GROUP VARIABLES

Variable	Sum of Squares	Mean Square	Degrees of Freedom	F Ratio	Probability
Patient Age					
Groups	0.2917	0.0972	3	0.172	0.9142
Error	14.6750	0.5644	26		
Type of Surgery					
Groups	0.8333	0.8333	1	1.651	0.2094
Error	14.1333	0.5084	28		

TABLE 11

ANALYSIS OF VARIANCE ON PATIENT DISTRESS USING PATIENT AGE AND TYPE OF SURGERY AS GROUP VARIABLES

Variable	Sum of Squares	Mean Square	Degrees of Freedom	F Ratio	Probability
Patient Age					
Groups	5.0945	1.6982	3	3.647	0.0256*
Error	12.1055	0.4656	26		
Type of Surgery					
Groups	0.5333	0.5333	1	0.896	0.3520
Error	16.6667	0.5952			

*Denotes statistically significant at .05 level.

groups of surgery. However, there was a significant difference on DRSP among patients' age groups. A Scheffé multiple comparison test showed that no two groups were significantly different. Consequently, on comparing the means of the four groups, the greatest mean (2.222) was found to exist in group two, age 30-39 (see Table 12). Analysis of multi-variance on DRSP among two types of surgery, using age as an independent variable, showed that no two types were significantly different, although there was a trend in patients having cholecystectomies in the age group 30-39 years towards experiencing more distress than the other three age groups (see Table 13).

The results of Anova on PRSN revealed no significant differences among nurses' demographic variables (see Table 14). However, when the different levels of nursing education were used for Anova of PRSN, nurses with a post-basic baccalaureate degree infer that patients are experiencing more distress from their pain than nurses with the other levels of education (see Tables 15 and 16). In a larger sample, this result might be significant.

The distribution of ratings of patients' pain and distress as recorded by nurses, patients and observer are displayed in Tables 17-22. The nurse and patient groups are fairly similar in distribution, 50% saying that the patients had no pain, and 37-47% saying the patients had a little pain. The observer's pain ratings differed however, in which 30% were designated as "she has no pain," 47% as "she has a little pain," 20% as "she has quite a lot of pain," and 3%, based on one case, as "she has a very bad pain." In Tables 20-22, the distributions of the distress ratings are presented. The patients and observer rated

TABLE 12

COMPARISON OF MEANS OF PATIENT DISTRESS AND PATIENT AGE

Group	Frequency	Mean	Standard Deviation
20-29	5	1.200	0.447
30-39	9	2.222	0.972
40-49	8	1.375	0.518
50 and over	8	1.375	0.518

TABLE 13

ANALYSIS OF VARIANCE ON PATIENT DISTRESS USING PATIENT AGE AND TYPE OF SURGERY AS GROUP VARIABLES

Variable	Sum of Squares	Mean Square	Degrees of Freedom	F Ratio	Probability
Type of Surgery					
Groups	5.3333	5.3333	1	6.1538	0.325*
Error	8.6667	0.8667	10		

	Mean	Variance	Standard Deviation
Cholecystectomy	2.6667	1.4667	1.211
Hysterectomy	1.3333	0.2667	0.5164

*Denotes statistically significant at .05 level.

TABLE 14

ANALYSIS OF VARIANCE ON NURSE PAIN RATING USING DEMOGRAPHIC VARIABLES AS GROUP VARIABLES

Variable	Sum of Squares	Mean Square	Degrees of Freedom	F Ratio	Probability
Type of Surgery					
Groups	0.3000	0.1400	1	0	1.000
Error	9.4667	0.3381	28		
Age of Nurse					
Groups	0.9000	0.3000	3	0.911	0.4495
Error	8.5667	0.3295	27		
Nurse Marital Status					
Groups	0.3000	0.1500	2	0.442	0.6474
Error	9.1667	0.3395	27		
Nurse Children					
Groups	0.2667	0.2667	1	0.812	0.3753
Error	9.2000	0.3284	28		
Nursing Services					
Groups	1.7367	0.5789	3	1.947	0.1468
Error	7.7299	0.2973	26		
Nursing Education					
Groups	0.7778	0.2593	3	0.776	0.5181
Error	8.6889	0.3324	26		
Patient Age					
Groups	0.7917	0.2639	3	0.791	0.5100
Error	8.6750	0.3337	26		

TABLE 15

ANALYSIS OF VARIANCE ON NURSE DISTRESS USING DEMOGRAPHIC VARIABLES AS GROUP VARIABLES

Variable	Sum of Squares	Mean Square	Degrees of Freedom	F Ratio	Probability
Type of Surgery					
Groups	0.3000	0.3000	1	0.450	0.5078
Error					
Age of Nurse					
Groups	0.4000	0.1333	3	0.187	0.9045
Error	18.5667	0.7141	27		
Nurse Marital Status					
Groups	0.6572	0.3286	2	0.485	0.6212
Error	18.3095	0.6781	27		
Nurse Children					
Groups	0.0167	0.0167	1	0.025	0.8764
Error	18.9500	0.6768	28		
Nursing Service					
Groups	1.8077	0.6026	3	0.913	0.4483
Error	17.1590	0.6600	26		
Nursing Education					
Groups	4.1000	1.3667	3	2.390	0.0917
Error	14.8667	0.5718	26		
Patient Age					
Groups	1.7917	0.5972	3	0.904	0.4525
Error	17.1750	0.6606	26		

TABLE 16

COMPARISON OF MEANS ON NURSE DISTRESS RATING USING NURSE LEVEL OF EDUCATION AS INDEPENDENT VARIABLE

Group	Frequency	Mean	Standard Deviation
Hospital R.N.	12	1.9167	0.7930
College R.N.	4	0.5000	0.2500
B.Sc.N.	5	2.000	0.7071
R.N.A.	9	2.000	0.8944

TABLE 17

DISTRIBUTION OF NURSE RESPONDENTS ON PAIN RATING

Code No.	Pain Rating	Absolute Frequency	Relative Frequency (Percent)
1	She has no pain	15	50.0
2	She has a little pain	14	46.7
3	She has quite a lot of pain	1	3.3
4	She has a very bad pain	0	0.0
		30	100.0

Mean = 1.53; S.D. = .571

TABLE 18

DISTRIBUTION OF PATIENT RESPONDENTS ON PAIN RATING

Code No.	Pain Rating	Absolute Frequency	Relative Frequency (Percent)
1	I have no pain	15	50.0
2	I have a little pain	11	36.7
3	I have quite a lot of pain	4	13.7
4	I have a very bad pain	0	0.0
		30	100.0

Mean = 1.63; S.D. = .72

TABLE 19

DISTRIBUTION OF OBSERVER RESPONDENTS ON PAIN RATING

Code No.	Pain Rating	Absolute Frequency	Relative Frequency (Percent)
1	She has no pain	9	30.0
2	She has a little pain	14	46.7
3	She has quite a lot of pain	6	20.0
4	She has a very bad pain	1	3.3
		30	100.0

Mean = 2.00; S.D. = .81

TABLE 20

DISTRIBUTION OF NURSE RESPONDENTS ON DISTRESS RATING

Code No.	Distress Rating	Absolute Frequency	Relative Frequency (Percent)
1	She feels fine	9	30.0
2	She feels a little upset	14	46.7
3	She is fairly upset and worried	6	20.0
4	She is very distressed and worried	1	3.3
		30	100.0

Mean = 2.00; S.D. = .81

TABLE 21

DISTRIBUTION OF PATIENT RESPONDENTS ON DISTRESS RATING

Code No.	Distress Rating	Absolute Frequency	Relative Frequency (Percent)
1	I feel fine	16	53.3
2	I feel a little upset	11	36.7
3	I feel fairly upset and worried	2	6.7
4	I feel very distressed and worried	1	3.3
		30	100.0

Mean = 1.60; S.D. = .77

TABLE 22

DISTRIBUTION OF OBSERVER RESPONDENTS ON DISTRESS RATING

Code No.	Distress Rating	Absolute Frequency	Relative Frequency (Percent)
1	She feels fine	12	40.0
2	She feels a little upset	11	36.7
3	She is fairly upset and worried	6	20.0
4	She is very distressed and worried	1	3.3
		30	100.0

Mean = 1.40; S.D. = .70

the degree of distress experienced by patients in a similar pattern, but the nurses rated the patient as less upset than the other two types of raters (see Tables 20-22).

The results of multi-variance analyses on the dependent variables PRSN and DRSN and using the independent variables PRSO and DRSO are displayed in Tables 23-24. The distress ratings of the observer nurse are statistically significant ($p = .027$) both in relation to nurses' pain rating and nurses' distress rating. The observer's pain ratings are also statistically significant (see Table 23) both in relation to nurses' pain rating and nurses' distress ratings (see Table 24).

Analyses of multi-variance on the dependent variables PRSN and DRSN using the independent variables, nurse demographic variables, are shown in Table 25. No groups were statistically significant at alpha .05 level. While nursing education did not show significance, a larger sample might have made a difference in this respect. Nurses who had been nursing for 10 years or more rated patients as being most distressed (see Table 25).

When analyses of multi-variance were applied to the dependent variables PRSP and DRSP with the independent variables, patient demographic data, no groups were statistically significant (see Table 26).

Reliability of Pain Measuring Instruments

In order to establish the reliability of the Hayward and Johnson pain instruments used in this study, two measures were obtained at the same time, using the same instrument by the nurse and the patient. A low reliability coefficient of .241 was obtained for the Pain

TABLE 23

ANALYSIS OF VARIANCE ON NURSE PAIN VARIABLE USING OBSERVER PAIN AND DISTRESS AS INDEPENDENT VARIABLES

Variable	Sum of Squares	Mean Square	Degrees of Freedom	F Ratio	Probability
Observer Pain					
Groups	3.7814	0.9123	3	3.589	0.0281*
Error	5.6728	0.2317	26		
Observer Distress					
Groups	2.2785	0.9283	3	3.612	0.0265*
Error	6.6816	0.2570	26		

*Denotes statistical significance at .05 level.

TABLE 24

ANALYSIS OF VARIANCE ON NURSE DISTRESS VARIABLE USING OBSERVER PAIN AND DISTRESS SCORES AS INDEPENDENT VARIABLES

Variable	Sum of Squares	Mean Square	Degrees of Freedom	F Ratio	Probability
Observer Pain					
Groups	4.4612	1.2892	3	3.5481	0.0268*
Error	9.7861	0.4731	26		
Observer Distress					
Groups	5.5576	1.8525	3	3.592	0.0270*
Error	13.4091	0.5157	26		

*Denotes statistical significance at .05 level.

TABLE 25

MULTIVARIATE ANALYSIS OF VARIANCE OF NURSE PAIN AND NURSE DISTRESS USING NURSE DEMOGRAPHIC VARIABLES AS INDEPENDENT VARIABLES

Variable: Type of Surgery	Chole-cystectomy	Hyster-ectomy
Pain	1.5333	1.5333
Distress	1.8667	2.0667

Variable: Age	20 - 29	30 - 39	40 - 49	50 and Over
Pain	1.5333	1.8333	1.3333	1.3333
Distress	1.8667	2.0000	2.1667	2.0000

Variable: Marital Status	Married	Single	Divorced
Pain	1.4762	1.7143	1.5000
Distress	2.0476	1.8571	1.5000

Variable: Nursing Service	1 - 2	3 - 5	6 - 10	More than 10
Pain	1.7692	1.2222	1.4000	1.6667
Distress	1.8462	2.0000	1.8000	2.6667

Variable: Education	RN Hosp.	RN Coll.	R.N.A.	B.Sc. N.
Pain	1.4167	1.7500	1.4444	1.8000
Distress	1.9167	1.2500	2.0000	2.6000

F = .0911

TABLE 26

MULTIVARIATE ANALYSIS OF VARIANCE OF PATIENT PAIN AND DISTRESS WITH PATIENT DEMOGRAPHIC VARIABLES

Variable: Type of Surgery	Chole-cystectomy	Hyster-ectomy
Pain	1.4667	1.8000
Distress	1.7333	1.4667

Variable: Age	20 - 29	30 - 39	40 - 49	50 and Over
Pain	1.6000	1.8333	1.6667	1.3333
Distress	1.6000	2.000	1.3333	1.3333

Thermometer, and .365 for the Distress Scale (see Table 27).

The ratings of the nurses' assessment of the patients' pain and distress were compared with those of the observer. Although the observer was using the Chambers-Price Pain Index, she was making an objective assessment of the patients' pain and distress, as were the nurses. The reliability between the nurses and observer was .522 for pain, and .538 for distress (see Table 28).

Validity of Pain Measuring Instruments

As mentioned above, face and content validity of the three pain measuring instruments were assessed by a group of clinical nurse experts. Subject to suggestions for clarification, several changes were made to the three tools. The wording of the Johnson Distress Scale was altered, on the recommendation of the panel, who felt that the word "distress" was not used in the colloquial situation. The investigator substituted the words "upset" and "worried" in order to clarify the meaning. The Chambers-Price Pain Index was used in its original state.

Concurrent validity of the three instruments was measured using Pearson product-moment correlation (see Table 29). The Pain Thermometer used by the patient was compared with two independent measures of the same pain at the same point in time, in other words, by the nurse and the observer. Concurrent validity has been defined as the degree of consistency of a test with regard to a criterion measure (Cronbach & Meehl, 1955). The results of the correlations are shown in Table 29. The nurse pain rating correlates with the patient pain rating .241, and the observer with the patient .059. Neither of these correlations is statistically significant.

TABLE 27

ALPHA COEFFICIENTS OF RELIABILITY OF THE HAYWARD PAIN THERMOMETER AND JOHNSON DISTRESS SCALE

	Patient Pain	Patient Distress
Nurse Pain	.241	
Nurse Distress		.365

TABLE 28

ALPHA COEFFICIENTS OF RELIABILITY OF THE HAYWARD PAIN THERMOMETER, JOHNSON DISTRESS SCALE AND CHAMBERS-PRICE SCALE

	Observer Pain	Observer Distress
Nurse Pain	.522	
Nurse Distress		.538

TABLE 29

PEARSON PRODUCT-MOMENT CORRELATION TO ESTABLISH CONCURRENT VALIDITY OF HAYWARD PAIN THERMOMETER AND JOHNSON DISTRESS SCALE WITH CHAMBERS-PRICE PAIN INDEX

	Nurse Pain	Patient Pain	Observer Pain	Nurse Distress	Patient Distress	Observer Distress
Nurse Pain	1.000	.241	.522*	.488*	.267	.500*
Patient Pain		1.000	.059	- .081	.287*	- .138
Observer Pain			1.000	.629*	.324*	.664*
Nurse Distress				1.000	.365*	.539*
Patient Distress					1.000	.333*
Observer Distress						1.000

*Denotes statistically significant at .05 level.

The coefficient of the concurrent validity between the patient distress rating and the nurse distress rating was .365, and patient distress and observer distress was .333, both of which are statistically significant (see Table 29).

Nurse-Patient Relationship Inventory

As previously discussed in Chapter II, the BLRI is composed of 64 items of which 16 items make up each of the four factors. In this pilot study, 30 nurses and 30 patients answered the questions in the inventory. The principal factors method of factor analysis was used to extract the maximum amount of variance as each factor was calculated but the results were uninterpretable. The question was then raised as to whether it was accurate to combine the scores of nurses and patients. Although both groups answered a similar questionnaire, the patients were rating a relationship they were experiencing, while the nurses were rating a relationship they were providing. This concern is reinforced by Barrett-Lennard (1969) who stated that partner A in a dyad would not share the same perception of partner B's response to him as B would of his own response to A. In this study, correlation coefficients between patients and nurses scores showed very little correlation (see Table 30).

Principal factor analyses of the four components of the BLRI resulted in uninterpretable solutions. This suggests the heteregenous nature of items, with very little commonalities among items.

Based on content validation by patients and nurses, 36 items were discarded from the inventory, leaving a total of 28 items (see Table 31). Of these 28 items, seven belonged in the category "Level of

TABLE 30

PEARSON CORRELATION COEFFICIENTS BETWEEN NURSE AND PATIENT HELPING RELATIONSHIP RATINGS

Patient	Level of Regard	Empathy	Unconditional Regard	Congruence
Nurse				
Level of Regard	.1974			
Empathy		.2323		
Unconditional Regard			.1909	
Congruence				.1739

TABLE 31

CONTENT VALIDATION OF 64-ITEM RELATIONSHIP INVENTORY BY 9 PATIENTS AND 11 NURSES

Item No.	LR	E	UN	C	True or False	Nurse Content Validity	Patient Content Validity	Item No.	LR	E	UN	C	True or False	Nurse Content Validity	Patient Content Validity
1	T				T			33	F				F	1	1
2		T			T		1	34		T			T	1	
3			F		F			35			F		F		8
4				T	T		1	36				T	T		2
5	T				T	1	2	37	T				T		
6		F			F		1	38		F			F		
7			T		T	1	1	39			T		T	2	7
8				F	F	1		40				F	F	2	3
9	F				F			41	T				T	2	6
10		T			T		1	42		T			T	2	1
11			F		F	2	2	43			F		F	2	5
12				T	T		1	44				T	T	1	4
13	T				T		2	45	F				F		4
14		F			F	1	2	46		F			F	5	4
15			T		T		2	47			T		T	1	3
16				F	F		2	48				T	T	1	3
17	F				F		1	49	F				F	1	2
18		T			T		2	50		F			F	1	2
19			F		F	1	1	51			T		T	2	5
20				T	T	1		52				F	F		3
21	F				F			53	F				F	1	3
22		F			F			54		T			T		3
23			T		T		4	55			F		F	2	5
24				F	F		1	56				T	T	1	5
25	T				T	1	2	57	T				T	2	4
26		F			F	2	2	58		F			F	1	1
27			F		F	1	4	59			T		T	1	5
28				T	T	2	1	60				F	F	2	2
29	F				F		1	61	T				T	4	5
30		T			T	1	1	62		T			T	1	2
31			T		T	2	1	63			F		F	1	3
32				F	F	1	1	64				F	F	2	3

LR Level of Regard
E Empathy
UN Unconditionality of Regard

C Congruence
T True
F False

Regard", nine in "Empathy", four in "Unconditional Regard", and eight in "Congruence" (see Table 31). Factor analysis was then applied to the patients' ratings of these 28 items, and then to the nurses' ratings. The most interpretable solutions were four factor, which explained approximately 52% of the variance (see Table 32).

Factor Analysis of Major Variables in Patients' Responses on 28 Items of Relationship Inventory

Factor 1: Likability

The first factor explained 21% of the variance and related primarily to the outward relationship of the nurse as perceived by the patient. The first 10 items all with high loadings on Factor 1 were concerned with the ease and understanding that the nurse brought into the relationship as perceived by the patient. These items did not correlate with Barrett-Lennard's categorization of factors (see Table 32), but were similar to findings made by Walker and Little (1969).

Factor 2: Level of Regard

The second factor explained 12% of the total variance. The three items that loaded high on this factor relate to the patients' perception of the feelings of the nurse towards her. Two of these items were classified by Barrett-Lennard as "Level of Regard" but the third as "Congruence" (see Table 33).

Factor 3: Response

The third factor explained 9% of the variance in responses. Included in the few items that loaded high were reactions or behavioural responses of the nurse towards the patient. These items were all

TABLE 32

DIMENSIONS OF RELATIONSHIP INVENTORY, PATIENT RATING: VARIMAX ROTATION ORTHOGONAL SOLUTION

Item No.	Variable Description	Commonalities	Factors 1	2	3	4
12	I feel that she is real and genuine with me (congruence)	.766	.8375	.2328	.0715	.0751
4	She is comfortable and at ease in our relationship (congruence)	.734	.8325	-.1061	-.0124	.1724
34	She usually understands the whole of what I mean (empathy)	.827	.8317	.3441	.0106	.1327
19	She wants me to be a particular kind of person (unconditional)	.506	.6291	.1821	-.0230	-.2771
37	She is friendly and warm with me (level of regard)	.392	.6233	.0493	.0302	.0257
30	She realizes what I mean even when I have difficulty saying it (empathy)	.492	.5810	-.2046	.3350	.0176
1	She respects me as a person (level of regard)	.374	.5356	.1689	.2420	.0160
13	I feel appreciated by her (level of regard)	.309	.5320	.0478	-.0719	.1391
2	She wants to understand how I see things (empathy)	.290	.5295	-.0958	.0090	.0330
10	She nearly always knows exactly what I mean (empathy)	.407	.5170	-.2255	.1618	-.2506

TABLE 33

DIMENSIONS OF RELATIONSHIP INVENTORY, PATIENT RATING: VARIMAX ROTATION ORTHOGONAL SOLUTION

Item No.	Variable Description	Commonalities	Factors 1	2	3	4
24	She wants me to think that she likes me or understands me more than she really does (congruence)	.686	.0648	.8028	.0779	-.175
29	I feel that she disapproves of me (level of regard)	.736	-.1049	.7932	.2356	-.2029
33	She just tolerates me (level of regard)	.494	.3466	.5872	.1146	.1253
58	Her response to me is usually so fixed and automatic that I don't really get through to her (unconditional)	.475	-.0669	.0659	.6583	-.1802
17	She is indifferent to me (level of regard)	.645	.1348	.4769	.5905	.2254
16	It makes her uneasy when I ask her to talk about certain things (congruence)	.462	.2277	.2447	.5815	-.1114
38	She just takes no notice of some things that I think or feel (empathy)	.308	.0398	-.0296	.5150	.2026
22	Her own attitudes toward some of the things I do or say prevent her from understanding me (empathy)	.436	.0908	.3372	.0861	.5538
8	I feel that she puts on a role or front with me (congruence)	.393	.2181	.2889	-.0605	.5087

phrased in a negative format, and the patients rated the nurses low in these behaviours. Each one of these items which loaded high as one factor came from each of the four Barrett-Lennard categories (see Table 33).

Factor 4: Openness

Factor 4 explained 9% of the variance in response to the 28 items, and included high loadings for the openness or readiness to understand. Barrett-Lennard calls these items empathy and congruence. These items were phrased in a negative format in the questionnaire and were rated as very low by the patients (see Table 33).

Factor Analysis of Major Variables in Nurses' Responses on 28 Items of the Relationship Inventory

Factor 1: Non-evaluative Acceptance

The first factor explained 21% of the variance, and related primarily to the nurses' feelings towards the patient; that she felt genuine and sincere in her interest for them, and her regard for them as people. The first six items that load highly on Factor 1 differ from those that showed up loading high on any of the factors in the factor analysis of patients' scores (see Table 34).

Factor 2: Response

The second factor explained 12% of the total variance. The three items that loaded highly on this factor relate to the nurses' response to the patient. The three items are phrased in negative terminology. Two of these items are classified as "congruence", and one as "empathy" by Barrett-Lennard (see Table 34).

TABLE 34

DIMENSIONS OF RELATIONSHIP INVENTORY, NURSE RATING: VARIMAX ROTATION ORTHOGONAL SOLUTION

Item No.	Variable Description	Commonalities	Factors 1	2	3	4
12	I feel that I am genuinely myself with ______. (congruence)	1.000	.8450	.1075	-.0177	-.2429
33	I put up with ______. (level of regard)	.562	.6725	-.2216	-.1899	.0547
3	The interest I feel in _____ depends on the things she says or does. (unconditionality)	.562	.6261	-.3200	.2687	.1632
22	What _____ says or does arouses feelings in me that prevent me from understanding her. (empathy)	.609	.6017	.5761	.1748	-.2068
36	I am able to be sincere and direct in whatever I express with _____. (congruence)	.598	.5398	-.0085	.0456	.5126
38	I ignore some of _____ feelings. (empathy)	.538	.5033	.1984	.0470	-.0045
6	I understand _____'s words but do not know how she actually feels. (empathy)	.422	.0025	.7092	-.0706	-.1915
16	It bothers me when _____ tries to ask or talk about certain things. (congruence)	.850	.1500	.6262	.0862	.0667
32	Sometimes I am not at all comfortable with _____ but we go on, outwardly ignoring it. (congruence)	.850	.2281	.5744	.1152	.1711

TABLE 34 (Continued)

Item No.	Variable Description	Commonalities	Factors 1	2	3	4
1	I respect _____ as a person. (level of regard)	.693	.2078	-.2389	.7335	.0694
57	I truly am interested in _____. (level of regard)	.539	-.0428	-.0368	.6852	.1694
4	I feel at ease with _____. (congruence)	.636	.4422	.2433	.6560	.0499
13	I appreciate _____ as a person. (level of regard)	.639	.3744	-.0867	.6060	.5087
37	I feel friendly and warm toward _____. (level of regard)	.658	.4754	.3580	.5277	.3204
24	I would really prefer _____ to think that I like or understand her even when I don't. (congruence)	.480	-.0960	.3764	.1298	.7551
30	I can tell what _____ means, even when she has difficulty saying it. (empathy)	.496	-.0516	.0605	.1099	.5929

Factor 3: Level of Regard

The third factor explained 10% of the variance in responses. Four of the items that loaded high had been classified by Barrett-Lennard as "Level of Regard". The fifth item "I feel at ease with _____." is classified as "Congruence", but in fact is similar in connotation to "I feel friendly and warm towards _____." (see Table 34).

Factor 4: Understanding

Factor 4 explained 9% of the variance in responses to the 28 items, and included two items that loaded highly. The first item "I would prefer _____ to think that I like or understand her even when I don't." was rated negatively by the nurses. This item and item 30 appeared to relate to the understanding and feelings nurses held towards the patient (see Table 34).

Reliability of the Relationship Inventory

In this study, a split-half reliability was established for the four factors as described by Barrett-Lennard. The coefficients were subsequently revised using the Spearman-Brown formula, and the correlation coefficients obtained for the four items are displayed in Table 35. These results may be regarded as a moderately high level of reliability for the Relationship Inventory.

Validity of the Relationship Inventory

Content Validity

As previously discussed in Chapter III, patients and nurses were asked to validate the content of the Relationship Inventory on its appropriateness for use in the acute surgical setting. All items that

TABLE 35

PEARSON PRODUCT-MOMENT CORRELATION BETWEEN SPLIT-HALVES OF RELATIONSHIP INVENTORY (PATIENT RATING)

	Level of Regard	Empathy	Unconditional Regard	Congruence
Level of Regard	.7095			
Empathy		.5364		
Unconditional Regard			.5500	
Congruence				.5360

Spearman-Brown

Level of Regard	.8300
Empathy	.6983
Unconditional Regard	.7096
Congruence	.6979

were regarded by three or more of the validators as inappropriate or unclear, were discarded (see Table 31). Out of the original 64 items, 28 were retained.

Construct Validity

Factor analysis was used as a descriptive technique in order to identify the extent to which factors in this study would match the major attributes postulated by Barrett-Lennard (1969). The assumption behind this analysis was that items in the questionnaire would show up in factor solutions in the four categories described by Barrett-Lennard. In order to carry out this factor analysis, the four groups, each made up of 16 items, were analyzed separately. The results from this analysis were not interpretable, and did not show empirical evidence of construct validity. An overall factor analysis was also indicative that there is no validity for the major variables in this study as they did not separate out into clearcut identifiable factors.

The Relationship of Patients' Pain and Distress and Perceived Relationship of the Nurse

In order to determine the association of certain variables on the patient's perception of pain, a step-wise multiple regression analysis was carried out in which the patient's pain score was treated as the dependent variable, and the factors "Congruence, Empathy, Unconditional Regard and Level of Regard" and the age group 30-39 years were treated as independent variables.

The best predictor of patients' pain was "Level of Regard" followed by "Congruence," both as negative coefficients. In other words, when the patient perceived the nurse's level of regard and congruence as high, she perceived her pain as low. The other three independent variables contributed little to the total variance (see Table 36).

Multiple Regression Analysis on Patients' Distress

Step-wise multiple regression analysis was carried out for the dependent variable, DRSP, and accounted for only 9% of the variance (see Table 37). In this analysis, it was age that explained the major portion of the variance (approximately 5%). The four Relationship Inventory factors influenced the patient's distress score negatively. In other words, there was an inverse relationship between patients' distress and the Relationship Inventory factors.

The patient age group of 30-39 years was the best predictor of patients' distress, as had been noted previously in analysis of variance.

Correlation Between the Relationship Inventory Factors and Patients' Perception of Pain and Distress

Tests for correlation between the Relationship Inventory factors and PRSP revealed a statistically significant negative correlation between "Congruence" and PRSP (see Table 38). The remaining three factors did not correlate significantly, but there was a directional trend between them and PRSP (see Table 38).

However, correlations between the four Relationship Inventory factors and DRSP were all statistically significant, and all correlated negatively (see Table 38). In other words, as the patient's perception

TABLE 36

MULTIPLE REGRESSION ANALYSIS ON PATIENT PAIN*

Order of Entry	Variable Description	Regression Coefficient	R^2
1	Congruence	-.3298	.1843
2	Unconditional Regard	.2113	.2080
3	Level of Regard	-.4266	.2377
4	Empathy	.1477	.2440
5	Age 30 - 39	-.1750	.2676

*Dependent Variable = Total Patient Pain Score

Independent Variables = Total Level of Regard, Empathy, Unconditional Regard and Congruence Scores, as well as Patient Age, 30 - 39 years

TABLE 37

MULTIPLE REGRESSION ANALYSIS ON PATIENT DISTRESS*

Order of Entry	Variable Description	Regression Coefficient	R^2
1	Level of Regard	-.1108	.1371
2	Unconditional Regard	-.1435	.1624
3	Empathy	.1127	.1837
4	Congruence	-.0942	.1885
5	Age 30 - 39	.4350	.3339

*Dependent Variable = Total Patient Distress Score

Independent Variables = Total Level of Regard, Empathy, Unconditional Regard and Congruence Scores, as well as Patient Age, 30 - 39 years

TABLE 38

CORRELATION OF PATIENT PAIN AND DISTRESS RATING AND RELATIONSHIP INVENTORY RATINGS

	Patient Pain	Patient Distress	Patient Level of Regard	Patient Empathy	Patient Unconditional Regard	Patient Congruence
Patient Pain	1.000	.781*	- .284	- .081	- .231	- .340*
Patient Distress		1.000	- .3703*	- .1480*	- .3235*	- .3091*
Patient Level of Regard			1.000	.6711	.5026	.7470
Patient Empathy			.6711	1.000	.3775	.5643
Patient Unconditional Regard			.5026	.3775	1.000	.3717
Patient Congruence			.7470	.5643	.3717	1.000

*Denotes statistical significance at .05 level.

of distress increased, the level of helping relationship perceived by the patient decreased.

Canonical Correlation Between Patients' Pain and Distress and the Relationship Inventory Factors

Canonical correlations were computed on the data in order to do simultaneous treatment on more than one dependent variable. The test is able to perform many pairs of linear relationships in order to account for a maximum amount of the relationship between two sets of variables.

In this study, the maximum correlation between the two sets of variables, i.e. the two dependent variables, PRSP and DRSP, and the four independent variables, level of regard, empathy, unconditional regard and congruence, was .5, which was not statistically significant at alpha .05 level (see Table 39). The correlations between the variables are displayed in Table 38. The dependent variables PRSP and DRSP have a low correlation coefficient with the four independent variables. In a study conducted by Logan (1980), 71 nurses and patients formed the sample; the correlations obtained are displayed in Appendix G. On comparing these results with the results of the author's study displayed in Table 38, there appears to be a similar trend, although Logan's are more robust. The factor "Unconditional Regard" correlates weakly in this study, (-.32, .50, .38) and in Logan's study, (.58, .53, .63).

In concluding this chapter, the results of this study show some interesting differences among several of the variables.

TABLE 39

CANONICAL CORRELATION ANALYSIS OF SENSORY AND REACTIVE COMPONENTS OF PAIN WITH RELATIONSHIP INVENTORY

Number	Eigenvalue	Canonical Correlation	Wilks' Lambda	Chi-Square	Degrees of Freedom	Significance
1	.277	.5267	.6431	11.2586	8	.187
2	.110	.3317	.8900	2.9725	3	.396

COEFFICIENTS FOR CANONICAL VARIABLES OF SECOND SET

	CANVAR 1
Level of Regard	.7824
Empathy	.3826
Unconditional Regard	.1624
Congruence	-.5613

COEFFICIENTS FOR CANONICAL VARIABLES OF FIRST SET

	CANVAR I
Sensory	.7610
Distress	.4663

CHAPTER V

SUMMARY AND CONCLUSIONS

In this study, the investigator examined a number of constructs which have been identified as influencing an important area of nursing practice, the management of patients' pain. The particular focus was the identification of the effect the interaction between the nurse and patient had on the patient's perception of pain. Specifically, four dimensions of the relationship as described by Barrett-Lennard (1969) were measured using the BLRI. Problems were encountered in administration of this instrument for two reasons: (1) post-operative patients found that the 64 items in the questionnaire were tiring for them to answer; and (2) the patients often did not know the identity of the nurse caring for them at the time they were being questioned. The two dimensions of the pain experience, sensory and reactive, were measured by the Hayward Pain Thermometer and Johnson Distress Scale. Of interest in this study was whether patients' ratings of their own pain and distress correlated with the ratings made by the nurses. Very little difficulty was encountered by the respondents in completing the Hayward and Johnson instruments. However, a drawback was encountered in the Likert Scale of the pain thermometer and distress rating scale. If there had been finer gradations on the scale, more subtle differences between patients might have been detected. A serious flaw in the distress rating scale lay in the choice of words used in the instrument. Originally, Johnson et al., (1975) used the word "distress" in each of the five categories. The author altered this word on the advice of a content validation committee, who felt that a more colloquial word such as "upset" would be more appropriate. The author added the words "distress" and "worried" on three occasions, and allowed "upset" to stand alone in the remaining two statements. This error might be a legitimate criticism of the internal validity of the instrument.

From the analyses of the data, some interesting results emerged. Nurses' ratings of the amount of sensory pain the patients were experiencing did not correlate with the patients' ratings. However, there was a statistically significant correlation between the ratings of the patients' distress made by the nurses and that made by patients. In other words, nurses in this study were able to assess the distress experienced by patients in pain more accurately than they assessed the sensory dimension of the pain. Nurses with a post-basic baccalaureate degree assessed patients as experiencing more distress than did nurses with a hospital or college diploma, or nursing assistants. Nurses who had 10 years or more experience assessed the distress patients were experiencing to be greater than did nurses who had had less experience. The latter result is contrary to previous studies in which it has been found that there is a negative correlation between length of nursing experience and empathy (Forsyth, 1979). Also, in relation to the rating of distress, it was found that patients aged between 30 and 39 years, following a cholecystectomy, experienced more distress than other age groups who underwent the same procedure. The researcher observed that patients who had had a cholecystectomy preferred to remain in bed and appeared to be in some discomfort compared to the gynaecological patients who were out of bed, more mobile, and wearing their own night clothes.

Of the four dimensions of a relationship, level of regard, empathy, congruence and unconditional regard, only congruence was found to correlate significantly and negatively with patients' ratings of pain. When patients regarded their nurses as highly congruent, they perceived their pain to be less. However, all four factors of the relationship inventory correlated significantly with patients' ratings of their distress.

Factor analysis was applied to the 28 items judged by a team of validators as appropriate to the surgical setting. The first factor to emerge consisted of items from the inventory indicating that patients found nurses who were friendly, warm and at ease in a relationship, as most helpful. Factor analysis in this study did not support previous findings reported by Barrett-Lennard (1969). This may have been due to the small sample size, or because patients in the acute surgical nursing situation have and/or require a different type of interaction with nurses than a patient with psychological problems.

Discussion

Further research is indicated in the area of nurse-patient interactions. Nursing behaviours that patients find helpful and acceptable should be identified, and an inventory for use in the acute surgical setting should be developed. As one patient remarked to the interviewer, "yesterday I wanted my nurse to be a mother-figure, soft and comforting. Today, I feel better, and I want my nurse as a friend." The practicing nurse needs to be aware of the changing requirements of the patient and to adapt her responses accordingly.

Implications of this study for nursing administration relate to methods of assigning patients to nurses. Staffing patterns, patient classification and variable shifts have increased the complexity of the process of assigning nurses to patients. The work-load allocated to each nurse is generally heavy which has a direct effect on the amount of time the nurse spends with each patient. Many patients recognized their nurse by a description of her appearance rather than by her name. The implication of this observation is that the development of a constructive relationship between patient and nurse is difficult, if not impossible, to achieve. The scores in the Relationship Inventory could well be the ratings of patients' general assessment of nurses as helpers.

Without doubt, there are difficulties in assigning a patient to the same nurse on consecutive days. But it appeared that little effort was made to attempt this, even when possible. The question is raised, if nurses had a choice, would they prefer to care for the same patient on consecutive days, or would they prefer a different assignment each day, and thus avoid becoming too involved with any one patient?

The results of this study will be discussed in terms of implications for nursing education. Further research in "the helping relationship" is indicated. Are students in nursing schools being misinformed about the requirements for an acceptable, supportive relationship with patients in a variety of health care settings? Do patients in acute care settings require a supportive relationship based on Rogers' (1961) theory? With regard to assessing patients in pain, do practicing nurses base their assessment on theory, observing patients' vocal, verbal, skeletal and sympathetic responses to pain, or is it based on a preconceived idea of how much pain the patient ought to be experiencing?

Recommendations

1. Further work is required to strengthen a pain measurement tool and development of an instrument to measure the interaction between the nurse and the patient in the acute surgical area. Replication of this study with a larger sample might produce results more meaningful and generalization to the population would be possible.
2. It is recommended that methods of work allocation should be studied, with regard to patient assignment.
3. Further research in the area of nurse-patient interactions is indicated by the fact revealed in this study that the patients were not able to identify the nurse who was caring for them.
4. It is recommended that a shortened form of the BLRI be used in the clinical setting.

In conclusion, the skills and competencies of the practicing nurse in assessing patients' pain and distress, in providing appropriate supportive relationships, and in being perceptive to the changing needs of the patients, present a formidable task to both the schools of nursing and continuing education departments. Finally, it is important that nursing administration addresses itself to the identification of components of the organizational bureaucracy that may interfere with the nurse-patient interaction.

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APPENDIX A

HAYWARD PAIN THERMOMETER

JOHNSON DISTRESS RATING SCALE

NURSE AND PATIENT DATA COLLECTION FORM

Code: __________

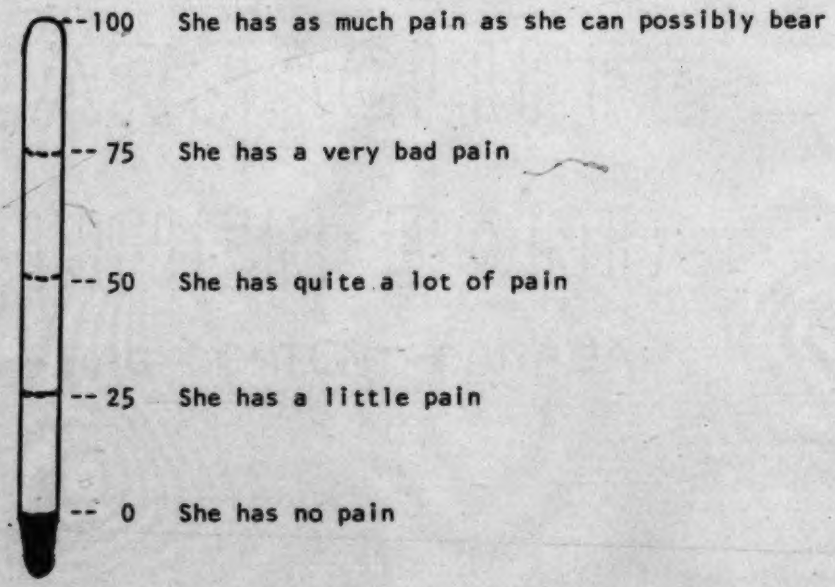
Interview Date: __________
Time: ____________________
Date of Surgery: __________
Time Surgery Ended: ______

Your Patient's Pain

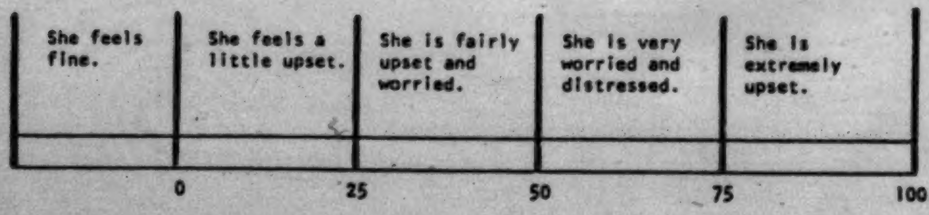
Please do not write your name on this form. It will be coded anonymously and your answers used for research purposes only.

Below are two scales on which we would like you to indicate by using a red pen, how much pain your patient is experiencing at this moment and the extent of distress she is feeling.

PAIN THERMOMETER


-100 She has as much pain as she can possibly bear
-- 75 She has a very bad pain
-- 50 She has quite a lot of pain
-- 25 She has a little pain
-- 0 She has no pain

DISTRESS SCALE


She feels fine.
She feels a little upset.
She is fairly upset and worried.
She is very worried and distressed.
She is extremely upset.
0
25
50
75
100

Code: __________

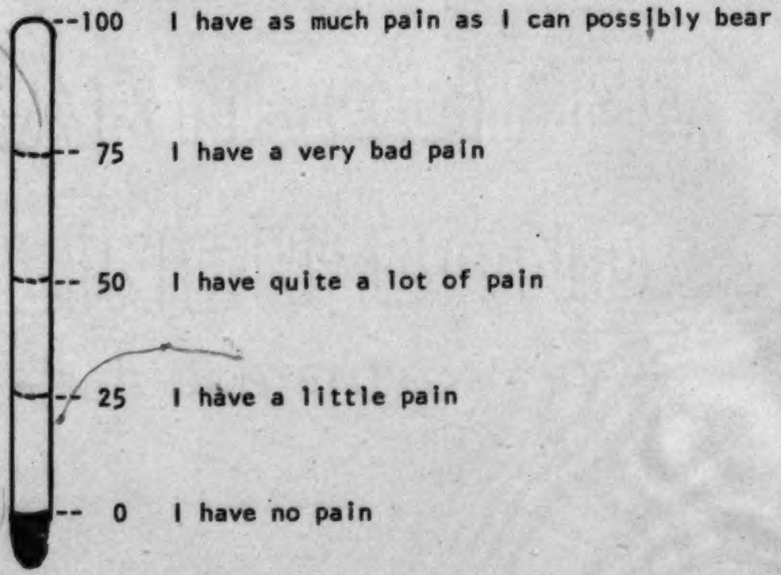
Interview Date: __________
Time: __________
Date of Surgery: __________
Time Surgery Ended: ______

Your Pain

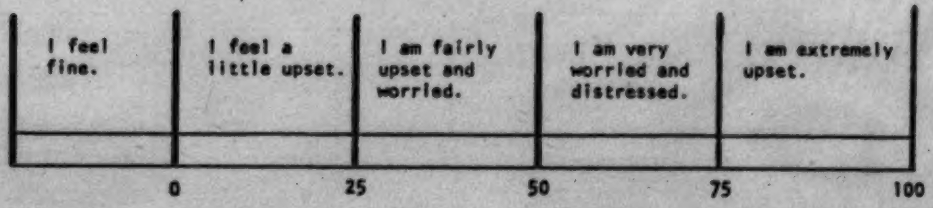
Please do not write your name on this form. It will be coded anonymously and your answers used for research purposes only.

Below are two scales on which we would like you to indicate by using a red pen, how much pain you are experiencing at this moment and the extent of distress you are feeling.

PAIN THERMOMETER


100 I have as much pain as I can possibly bear
75 I have a very bad pain
50 I have quite a lot of pain
25 I have a little pain
0 I have no pain

DISTRESS SCALE


I feel fine.
I feel a little upset.
I am fairly upset and worried.
I am very worried and distressed.
I am extremely upset.
0
25
50
75
100

APPENDIX B

CHAMBERS-PRICE PAIN RATING SCALE

OBSERVER'S DATA COLLECTION FORM

Observer's Form

Pain Rating Scale

Data Collection Form

Observation 1 2 3 4 5 6 7
Date of observation________
Time of observation________
Observer________

Location of patient: bed___ chair___ ambulatory___
Number of patients in room________
Number of visitors in room________
Number of visitors with patient________

Pulse____ Respirations________
Other action at time of observation:
Patient________
Nurse________

Pain Score________

1. **Attention** patient directs	☐ Almost complete attention to pain— very difficult to distract	☐ more attention to pain —less to distraction	☐ some attention to pain —some to distraction	☐ little attention to pain —easily distracted	☐ no attention to pain—no difficulty in distracting him or asleep
2. **Anxiety** patient has	☐ no tension, irritability or worry or asleep	☐ little tension, irritability, or worry	☐ some tension, irritability, or worry	☐ marked tension, irritability, or worry	☐ complete tension, irritability, or worry
3. **Verbal** patient states	☐ he has no pain or is asleep	☐ he has very little pain	☐ he has some pain	☐ he has a lot of pain	☐ he has severe pain
4. **Skeletal Muscle Response**					
a. patient is	☐ very restless	☐ markedly restless	☐ slightly restless	☐ very slightly restless	☐ quiet
b. patient has	☐ extremely tense muscles	☐ markedly tense muscles	☐ some tenseness of muscles	☐ little tenseness of muscles	☐ relaxed muscles
c. patient exhibits	☐ no frowning or grimacing	☐ little frowning and grimacing	☐ some frowning and grimacing	☐ marked frowning or grimacing	☐ constant frowning or grimacing
5. **Perspiration** patient has	☐ very marked perspiration	☐ marked perspiration	☐ some perspiration	☐ little perspiration	☐ normal perspiration
6. **Sounds** patient	☐ cries out or sobs	☐ groans, moans loudly	☐ groans, moans softly	☐ sighs, grunts softly	☐ talking in normal tones, or no sounds
7. **Nausea** patient	☐ retching, vomits	☐ says he thinks he is about to vomit	☐ says he feels "sick to his stomach"	☐ says he feels squeamish	☐ does not mention nausea

APPENDIX C

BARRETT-LENNARD RELATIONSHIP INVENTORY MO--64, OS-F-64

NURSE AND PATIENT DATA COLLECTION FORM

Code: __________

Interview Date: __________

Time: ____________________

Date of Surgery: __________

Time Surgery Ended: _______

RELATIONSHIP INVENTORY-FORM MO--64

Below are listed a variety of ways that one person may feel or behave in relation to another person.

Please consider each statement with reference to your present relationship with _______________, mentally adding his or her name in the space provided. If, for example, the other person's name was John, you would read statement #1 as "I respect John as a person".

Mark each statement in the left margin, according to how strongly you feel that it is true, or not true, in this relationship. Please mark every one. Write in +3, +2, +1, or -1, -2, -3 to stand for the following answers:

+3: Yes, I strongly feel that it is true.

+2: Yes, I feel it is true.

+1: Yes, I feel that it is probably true, or more true than untrue.

-1: No, I feel that it is probably untrue, or more untrue than true.

-2: No, I feel it is not true.

-3: No, I strongly feel that it is not true.

_______ 1. I respect _______ as a person.

_______ 2. I want to understand how _______ sees things.

_______ 3. The interest I feel in _______ depends on the things he/she says or does.

_______ 4. I feel at ease with _______.

_______ 5. I really like _______.

_______ 6. I understand _______'s words but do not know how he/she actually feels.

______7. Whether ______ is feeling pleased or unhappy with himself/herself does not change my feeling toward him/her.

______8. I am inclined to put on a role or front with ______.

______9. I do feel impatient with ______.

______10. I nearly always know exactly what ______ means.

______11. Depending on ______'s actions, I have a better opinion of him/her sometimes than I do at other times.

______12. I feel that I am genuinely myself with ______.

______13. I appreciate ______, as a person.

______14. I look at what ______ does from my own point of view.

______15. The way I feel about ______ doesn't depend on his/her feelings toward me.

______16. It bothers me when ______ tries to ask or talk about certain things.

______17. I feel indifferent to ______.

______18. I do usually sense or realise how ______ is feeling.

______19. I would like ______ to be a particular kind of person.

______20. When I speak to ______, I nearly always can say freely just what I'm thinking or feeling at that moment.

______21. I find ______ rather dull and uninteresting.

______22. What ______ says or does arouses feelings in me that prevent me from understanding him/her.

______23. Whether ______ criticises me or shows appreciation of me does not (or would not) change my inner feeling toward him/her.

______24. I would really prefer ______ to think that I like or understand him/her even when I don't.

______25. I care for ______.

______26. Sometimes I think that ______ feels a certain way, because that's the way I feel myself.

______27. I like ______ in some ways, while there are other things about him/her that I do not like.

_____28. I don't feel that I have been ignoring or putting off anything that is important for our relationship.

_____29. I do feel disapproval of _______.

_____30. I can tell what _______ means, even when he/she has difficulty in saying it.

_____31. My feeling toward _______ stays about the same; I am not in sympathy with him/her one time and out of patient another time.

_____32. Sometimes I am not at all comfortable with _______ but we go on, outwardly ignoring it.

_____33. I put up with _______.

_____34. I usually catch and understand the whole of _______'s meaning.

_____35. If _______ gets impatient or mad at me, I become angry or upset too.

_____36. I am able to be sincere and direct in whatever I express with _______.

_____37. I feel friendly and warm toward _______.

_____38. I ignore some of _______'s feelings.

_____39. My liking or disliking of _______ is not altered by anything that he/she says about himself/herself.

_____40. At times I just don't know, or don't realise until later, what my feelings are with _______.

_____41. I value our relationship.

_____42. I appreciate just how _______'s experiences feel to him/her.

_____43. I feel quite pleased with _______ sometimes, and then he/she disappoints me at other times.

_____44. I feel comfortable to express whatever is in my mind with _______, including any feelings about myself or about him/her.

_____45. I really don't like _______ as a person.

_____46. At times I think that _______ feels strongly about something and then it turns out that he/she doesn't.

_____47. Whether _______ appears in good spirits, or is bothered and upset, does not make me feel any more or any less appreciative of him/her.

______48. I can be quite openly myself in our relationship.

______49. Somehow _______ really irritates me (gets 'under my skin').

______50. At the time, I don't realise how touchy or sensitive _______ is about some of the things we discuss.

______51. Whether _______'s expressing "good" thoughts and feelings, or "bad" ones, does not affect the way I feel toward him/her.

______52. There are times when my outward response to _______ is quite different from the way I feel underneath.

______53. In fact, I feel contempt toward _______.

______54. I understand _______.

______55. Sometimes _______ seems to me a more worthwhile person than he/she does at other times.

______56. I don't sense any feelings in relation to _______ that are hard for me to face and admit to myself.

______57. I truly am interested in _______.

______58. I often respond to _______ rather automatically, without taking in what he/she is experiencing.

______59. I don't think that anything _______ says or does really alters the way I feel toward him/her.

______60. What I say to _______ often would give a wrong impression of my full thought or feeling at the time.

______61. I feel deep affection for _______.

______62. When _______ is hurt or upset I can recognise just how he/she feels, without getting upset myself.

______63. What other people think and feel about _______ does help to make me feel as I do toward him/her.

______64. I feel there are things we don't talk about that are causing difficulty in our relationship.

Please also provide the following information about yourself.

You

Age: __________ years
Sex: __________ (M or F)
Occupation: ______________________________

Code: __________

Interview Date: __________
Time: __________
Date of Surgery: __________
Time Surgery Ended: __________

RELATIONSHIP INVENTORY--FORM OS-F-64

Below are listed a variety of ways that one person may feel or behave in relation to another person.

Please consider each statement with reference to your present relationship with your nurse.

Mark each statement in the left margin, according to how strongly you feel that it is true, or not true, in this relationship. Please mark every one. Write in +3, +2, +1, or -1, -2, -3 to stand for the following answers:

+3: Yes, I strongly feel that it is true.
+2: Yes, I feel it is true.
+1: Yes, I feel that it is probably true, or more true than untrue.
-1: No, I feel that it is probably untrue, or more untrue than true.
-2: No, I feel it is not true.
-3: No, I strongly feel that it is not true.

_______1. She respects me as a person.

_______2. She wants to understand how I see things.

_______3. Her interest in me depends on the things I say or do.

_______4. She is comfortable and at ease in our relationship.

_______5. She feels a true liking for me.

_______6. She may understand my words but she does not see the way I feel.

_______7. Whether I am feeling happy or unhappy with myself makes no real difference to the way she feels about me.

_______8. I feel that she puts on a role or front with me.

______9. She is impatient with me.

______10. She nearly always knows exactly what I mean.

______11. Depending on my behaviour, she has a better opinion of me sometimes than she has at other times.

______12. I feel that she is real and genuine with me.

______13. I feel appreciated by her.

______14. She looks at what I do from her own point of view.

______15. Her feeling toward me doesn't depend on how I feel toward her.

______16. It makes her uneasy when I ask or talk about certain things.

______17. She is indifferent to me.

______18. She usually senses or realises what I am feeling.

______19. She wants me to be a particular kind of person.

______20. I nearly always feel that what she says expresses exactly what she is feeling and thinking as she says it.

______21. She finds me rather dull and uninteresting.

______22. Her own attitudes toward some of the things I do or say prevent her from understanding me.

______23. I can (or could) be openly critical or appreciative of her without really making her feel any differently about me.

______24. She wants me to think that she likes me or understands me more than she really does.

______25. She cares for me.

______26. Sometimes she thinks that I feel a certain way, because that's the way she feels.

______27. She likes certain things about me, and there are other things she does not like.

______28. She does not avoid anything that is important for our relationship.

______29. I feel that she disapproves of me.

______30. She realises what I mean even when I have difficulty in saying it.

_______31. Her attitude toward me stays the same: she is not pleased with me sometimes and critical or disappointed at other times.

_______32. Sometimes she is not at all comfortable but we go on, outwardly ignoring it.

_______33. She just tolerates me.

_______34. She usually understands the whole of what I mean.

_______35. If I show that I am angry with her she becomes hurt or angry with me, too.

_______36. She expresses her true impressions and feelings with me.

_______37. She is friendly and warm with me.

_______38. She just takes no notice of some things that I think or feel.

_______39. How much she likes or dislikes me is not altered by anything that I tell her about myself.

_______40. At times I sense that she is not aware of what she is really feeling with me.

_______41. I feel that she really values me.

_______42. She appreciates exactly how the things I experience feel to me.

_______43. She approves of some things I do, and plainly disapproves of others.

_______44. She is willing to express whatever is actually in her mind with me, including any feelings about herself or about me.

_______45. She doesn't like me for myself.

_______46. At times she thinks that I feel a lot more strongly about a particular thing than I really do.

_______47. Whether I am in good spirits or feeling upset does not make her feel any more or less appreciative of me.

_______48. She is openly herself in our relationship.

_______49. I seem to irritate and bother her.

_______50. She does not realise how sensitive I am about some of the things we discuss.

_______51. Whether the ideas and feelings I express are "good" or "bad" seems to make no difference to her feeling toward me.

_______52. There are times when I feel that her outward response to me is quite different from the way she feels underneath.

_______53. At times she feels contempt for me.

_______54. She understands me.

_______55. Sometimes I am more worthwhile in her eyes than I am at other times.

_______56. I have not felt she tries to hide anything from herself that she feels with me.

_______57. She is truly interested in me.

_______58. Her response to me is usually so fixed and automatic that I don't really get through to her.

_______59. I don't think that anything I say or do really changes the way she feels toward me.

_______60. What she says to me often gives a wrong impression of her whole thought or feeling at the time.

_______61. She feels deep affection for me.

_______62. When I am hurt or upset she can recognise my feelings exactly, without becoming upset herself.

_______63. What other people think of me does (or would, if she knew) affect the way she feels toward me.

_______64. I believe that she has feelings she does not tell me about that are causing difficulty in our relationship.

Please also provide the following information about yourself.

You

Age: __________years
Sex: __________(M or F)
Occupation: ______________________________

APPENDIX D

GUIDELINES FOR INSTRUCTING PATIENTS AND NURSES TO COMPLETE QUESTIONNAIRES

YOUR PAIN

I am interested in how different people describe their pain, distress, and the interaction between themselves and their nurse.

In answering the following questions, you are asked to read each item quickly, and select a rating on each scale.

I am interested in YOUR opinion. There is no right or wrong answer.

Be sure to answer each question, and rate each scale. Your answers will be treated with strict confidentiality, and will be used for research purposes only.

Thank you.

Sarah J. Doughty.

Sarah J. Doughty, R.N.

YOUR PATIENT'S PAIN

I am interested in how nurses describe their patients' pain, distress, and nurse-patient interaction.

In answering the following questions, you are asked to read each item quickly, and select a rating on each scale. I am interested in YOUR opinion. There is no right or wrong answer.

Be sure to answer each question and rate each scale. Your answers will be treated with strict confidentiality and will be used for research purposes only.

Thank you.

Sarah J. Doughty

Sarah J. Doughty, R.N.

APPENDIX E

CONSENT FROM SURGEON

THE UNIVERSITY OF ALBERTA

FACULTY OF NURSING

CLINICAL SCIENCES BUILDING
EDMONTON, CANADA T6G 2G3

Dear Doctor,

I am a graduate student in the Faculty of Nursing presently working on a thesis in nursing. I am interested in studying the pain experienced by postoperative patients. The purpose of this study is to explore the relationship of the patient and the nurse to the patient's perception of pain. The data will be collected by myself through a personal interview with patients and nurses willing to participate, three days postoperatively. The period I would like to collect data would be during the month of October 1980.

I request your permission to interview your patient,

____.

Thank you for your co-operation.

Yours sincerely,

Sarah J. Doughty.

Sarah J. Doughty, R.N.,B.Sc.N.

Doctor's signature: ____________________________________

APPENDIX F

INTRODUCTORY LETTER TO NURSE AND PATIENT PARTICIPANTS, AND CONSENT FORMS

THE UNIVERSITY OF ALBERTA

FACULTY OF NURSING

CLINICAL SCIENCES BUILDING
EDMONTON, CANADA T6G 2G3

Dear Participant,

I am a graduate student in the Faculty of Nursing at the University of Alberta. I am interested in studying the experiences that patients undergoing surgery have after their operation.

I would appreciate your help by having your permission to ask you some questions about your patient's experiences after surgery. All the responses you give to the questions will be kept completely confidential.

Thank you for your time and cooperation.

Yours sincerely,

Sarah J. Doughty

Sarah J. Doughty, R.N.,B.Sc.N.

THE UNIVERSITY OF ALBERTA

QUAECUMQUE VERA

FACULTY OF NURSING

CLINICAL SCIENCES BUILDING
EDMONTON, CANADA T6G 2G3

This is to indicate that I, ________________________________,
have agreed to participate in a study to be conducted by Sarah J. Doughty, a nurse researcher, on patients' pain. It is my understanding that:

1. my participation in the study is voluntary and I will be able to withdraw from the study at any time with no consequences;
2. the patient and I will rate the patient's pain and our interaction, and
3. my name will not appear in any research report.

Signature: ____________________________

Date: ____________________________

THE UNIVERSITY OF ALBERTA

FACULTY OF NURSING

CLINICAL SCIENCES BUILDING
EDMONTON, CANADA T6G 2G3

Dear Participant,

I am a graduate student in the Faculty of Nursing at the University of Alberta. I am interested in studying the experiences that patients undergoing surgery have after their operation.

I would appreciate your help by having your permission to ask you some questions about your experiences after surgery. All the responses you give will be kept completely confidential.

Yours sincerely,

Sarah J. Doughty.

Sarah J. Doughty, R.N., B.Sc.N.

THE UNIVERSITY OF ALBERTA

FACULTY OF NURSING

CLINICAL SCIENCES BUILDING
EDMONTON, CANADA T6G 2G3

This is to indicate that I, ______________________________, have agreed to participate in a study to be conducted by Sarah J. Doughty, a nurse researcher, on patients' pain. It is my understanding that:

1. my participation in the study is voluntary and I will be able to withdraw from the study at any time with no consequences;
2. no additional laboratory tests will be carried out because of the study;
3. an objective rating of my pain will be made following surgery;
4. my patient records may be used to gather some information for this study. However, such information collected for this study will be kept confidential;
5. my name will not appear in any research report;
6. I may not benefit necessarily from participating in the study, and
7. my nurse and I will rate my pain and our interaction.

Signature: ________________________

Date: ____________________________

APPENDIX G

CORRELATION OF RELATIONSHIP INVENTORY FACTORS

(LOGAN, 1980)

CORRELATION OF RELATIONSHIP INVENTORY FACTORS*

	Level of Regard	Empathy	Unconditional Regard	Congruence
Level of Regard	1.00	.81	.58	.83
Empathy		1.00	.53	.81
Unconditional Regard			1.00	.63
Congruence				1.00

*Logan (1980)